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TIPS**
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46-47...

COMPUTER EXPRESS

FIRST NEWS • FIRST REVIEWS • BEST BUYS • YOUR WEEKLY GUIDE

AMIGA THIS PC IS £54...



MEGABOARD

Where to get 1Mb
of RAM for £64!

AMSTRAD



EXPLOSIVE!

Is your PC going to
blow up today?

GAMES



BARGAINS!!!

UBISOFT'S TOP
TITLES SLASHED



IS IT WORTH IT?

COMDEX NEWS



Express visits the world's
biggest computer show

WHAT'S NEW FOR THE MAC?



New kit on the block
Live now on page 11



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Frontend

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So you thought computing was all about spreadsheets, specifications and shoot-em-ups huh? Well here's the world of the wild, the wonderful, and the plain wacky..

PHONE-Y DISKS CON THE COPS

A confidence trick which took in thousands of people, including the police, has been ripped in the bud.

The sting went ahead following BT's (formerly British Telecom) controversial decision to charge users 44p per line for the use of directory enquiries. A company called Computer Information Services, operating from the address of Mr Alan Roberts in Cardiff, advertised a £99 floppy disk which, the company claimed in its adverts, contained every phone number in the UK.

It was not just naive members of the general public who were taken in by the phoney floppy. Cheshire Constabulary, several local councils, and many businesses also paid out cash for a service which never materialised.

Detective constable Jeff Norman of the South Wales CID explained to Express: "We caught on to the affair in March this year, although accounts had been opened in Robert's name". While no computers were ever actually involved in the scam, DC Norman told us: "From what we can tell, the man obviously knew what he was talking about. People phoned him up to ask about the disk and he gave all

the right answers".

According to a spokesman for BT this week: "There are 17 million names and addresses on the database at the moment". In order to accommodate this much data, the disk would have to be formatted to an utterly implausible 122,400K. In real terms, however, not one disk but 340, each formatted to 360K, would have to be used.

The man called Roberts has obviously got wise to police investigations. Since they began six weeks ago, he has not bothered to return to his address to collect the loot which keeps pouring in.

Dud disks were supposed to contain all the phone numbers in Britain

We asked DC Norman just how much money was involved: "We are looking at thousands rather than hundreds of pounds. We have all ready discovered a number of financial accounts". BT finally called in the police



PHOTOGRAPH BY GUY WILKINSON

• This man is suspected of creating thousands of people out of possibly over £100,000 with one floppy disk. Now he'd do it. Where did he do it, where's the money now, and do you know him?

because it was concerned that it might be losing money from its CD-ROM based Phone Disc and PC-based Phone Base systems. According to the BT spokesman: "As far as I know, all numbers in Telecom directories are copyright BT". This means that any company which wished to provide a service such as the one promised in the Cardiff con, would have to abide by the laws of copyright.

"We have no plans to take legal action against firms who set up real systems as long as they play by the rules", said the BT spokesman.

If you have any information or have been conned by CS, you should call the South Wales CID on 0222-222111 and ask for the Canton squad. ☐

Totally barbaric behaviour

Barbarian II, is currently under development by Storm - the software house responsible for the highly acclaimed SMOG. Also in the planning stages is a film of the classic boss-fren-up. As yet no details are available as to the star of the movie. But with Sly Stallone attempting to become a serious comedy actor, Arnie spending less time with his Quai and more with little children, and Daphne Lundgren not doing very much at all, the field is open.

Express readers with suggestions for who should get to play the Barbarian should be addressed to our web columnist, Dr Clare Anthony at Express Web. ☐



• Barbarian II is on its way. And so is the film - who do you think should play Arnie?

SHOOT FROM THE LIP

Yes, after an absence of nearly two years, Shoot From the Lip has been forced to return. In this regular weekly section you will read some of the most contentious, stupid, funny or downright absurd statements made in the computer world.

"I'm sorry I can't give you that information". The receptionist at an Atlanta Hotel next to the Cornish show when asked for the time.

"We obviously knew what he was talking about". Detective constable Jeff Norman talking about the man behind the Cardiff phone con.

"We feel that you've missed a trick here. We were trying to present Alan in a positive light, and your coverage was distinctly downbeat. We are especially disappointed that you printed the SMOG analysis". Alan UK's marketing manager, Peter Staddon in response to our coverage of his company's latest repositioning of the ST in the market. ☐



BIG BLUE GOES GREEN

IBM is following Apple Computers in a bid to become environment-friendly.

Apple has already been making eco-conscious noises about reducing CO₂s from its products, now IBM has gone one step further by instigating a multimillion dollar research initiative.

According to Big Blue, as IBM is affectionately known, "it is a major research programme intended to encourage the use of computer-based technology in the study of environmental problems".

These problems include ground water pollution, ozone depletion and waste disposal. Whether or not IBM is considering bundling screen filters as standard with all its machines has yet to be stated by the American computer giant. ☐

Revolutionary time travels

If you're thinking of taking a holiday abroad this year why not head for Britain when the People and Computers Milestones in a Revolution is about to open.

The expo starts on 29 June and features computers as diverse and fascinating as the 45-year-old ENIAC, the 20-year-old Intel 4004 processor, and the giant Wattra computer - only ten-year-old.

Visitors get to travel down nine "time tunnels" which culminate in 3D-reconstructed reproductions of situations in which computers played a major part. These include a 1930's government office replete with hundreds of clerks talking away at punch card machines, a 1960's Travellers Insurance Company where IBM's System/360 is used, and the 1970's where Digital Equipment's PDP-8 is used in brain surgery and in the lighting control station of Broadway's Chinese Theatre.

The site of this feast of computer nostalgia is Britain's Computer Museum, which is claimed to be the only museum in the world dedicated to examining the impact of computers.

Call 0181-617 426 2800 or fax 0181-617 426 2943. ☐



• Two of the world's best computer operators Jack Gilmore (left) and Joe Thompson at BNT in 1957. The analogue computing engine they are using has less processing power than a Sinclair Spectrum.

COVER FEATURE

Are you looking for the perfect palmtop PC?
Hewlett Packard's amazing new 95LX could be the one for you – turn to page 55



UK SCHOOLBOYS COMPETE IN COMPUTER OLYMPICS

Three Manchester schoolboys are currently competing in a computer Olympiad. Athens is the site of the international event in which pupils from 20 countries pit their wits against each other in an attempt to solve two algorithms in two days.

Last year's competition took place in the Soviet Union, and the winners walked off with art treasures worth £5,000.

The prize in 1991's Computer Olympics is being kept a tight secret until the victorious team is announced.

UK computer hardware makers ICL is sponsoring the team of three 17-year-olds: David Walker, Anthony Rix and Edward Sheldon (plus substitute Martin Brooks) who all attend the Manchester Grammar



• Computers in schools have gone far beyond the BASIC programming and typing skills phase – it's now got as far as Athens!

School. The lads had to make their way through a qualifying competition which they won outright. ICL is putting this down to the fact that it has been donating equipment, such as a DRS-300 PC, to the school for

over two years. Speaking about the team, school career's master Len Rix said: "They are incredibly competent and I am sure that they will do everyone credit in the international competition". ■

REVIEWS

Could you benefit from top quality glossy colour print-outs?
GP's Spectra*Star 430 delivers the goods at the right price – page 49

Fed up with typing? Now all you have to do is speak!
Yes, voice control is here – and it comes on a card with MIDI and a sampler tool – page 52



Want to use all your favourite programs simultaneously?
The latest version of Switch-It brings all the benefits of multi-tasking – page 56

EVERY WEEK

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All the top stories – pages 4-8

Games Week
Hot tips and news, plus TOK! review – page 50



We're just giving it away!
Your last chance to win the First Steps Amiga education pack – page 66



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Gazza outwits on line



A 18-year-old called Baron Magnus, aka Don Forgas, has just got guilty to third degree computer fraud in the US. He was arrested after allegedly charging \$6,000 worth of calls to Toys 'R Us. The maximum penalty for this crime is 100 years in prison.

Poor Gazza won't be playing too much today in the foreseeable future, but he can at least practice from home – by playing over the telephone.

Days before the Spurs star was headed off to hospital with an extremely nasty injury to the shin, he'd signed an exclusive contract with telephone game outfit, The Phone Program Company. Now the England Ace can dial into a game against his own self. Gazza's Hat-trick Hotline challenges callers to answer fiendishly tough puzzles in a sector trivia, with cash prizes for brainy football buffs.

TPPC's David Martin is happy. He thinks Gazza will be clocking up calls day and night. Gazza's Hat-trick Hotline is on 0800 345865. Calls cost 34p (cheap rate) or 44p per minute. ■

BLOCKS!

The man who invented Teletext, possibly the most addictive game in the entire history of the world, is working on another mindbender. *Alasop* Pajitov is now busy coding on *Katib*. The game will probably become one of the USSR's major exports in 1992.

COMPUTER CURES COBBERS

A new system which could save thousands of lives by saving time, is being developed in Australia.

Teletext is able to transmit high resolution images of X-rays and ultrasound scans in compressed format from outlying areas to major hospitals. The compression means that the images can be sent via modem without the danger of 'noise' on the line corrupting the data.

The system is not confined to still images. A frame grabber

can take single photographs from any moving film.

Teletext has been developed by Peter Dehman, a neurosurgeon at the Royal Melbourne Hospital. It is aimed particularly at speeding up diagnosis of illness which occur in the depths of the Australian outback. ■

• Once upon a time only *Slippy* could have saved the *Acacias* in the outback from certain death. Now a computer and a modem can. *Yid, did, did, did, did you?*



The 11th annual Comdex Spring attracts record attendance figures

COMDEX 1991: THE

This year's Comdex show took place in Atlanta Georgia between 20 and 23 May. According to the organizers, Interface, it attracted an estimated 900 exhibitors. These included names such as Microsoft, Citicorp, WordPerfect, and Samsung, as well as less well known companies like Darius, Experience Systems, and Egghead Software.

Although the attendance figures have not been compiled yet, Interface are claiming a record number of visitors, breaking the previous record of 61,000 set over four days at McCormick Place Chicago in 1989.

The chairman of Interface, and founding father of the Comdex show, Sheldon Adelson was effusive about the 1991 show: 'This industry is making a successful and historic transition. As it has done in previous occasions, the industry is using the Comdex



* The rise, the place, the hype attracted some 900 exhibitors from the great to the obscure. New branches abound, speeches were made, notebook competing tech centre stage, and multi-media was still a talking point.

platform, and the critical mass of the audience, to lift both the world economy into a new era of productivity'.

What he failed to note was the

fact that this year's show is also the birthplace of a fast approaching notebook war which could alter the face of personal computing over the next decade.

integrated circuit card slot.

It has a 16-colour LCD, backlit screen. And the whole thing weighs in at 5.7 pounds. Its price starts at \$256,000 (approx \$1,843).

Fujitsu has not stopped there however, it also announced a 16-bit handheld computer. The Acute 3000 is a DOS-compatible machine which is said to be the same size as a conventional scientific calculator.

The computer makes use of cards which offer up to 2Mb of memory. The conventional RS232 interface has been replaced by an optical version which Fujitsu claims is more reliable. Price has not yet been announced for this machine.

AST is also introducing a notebook its Premium Executive 386SX120. It runs both DOS 4.1 and Windows 3. The central processor is a 20MHz 386SX chip which supports a 640 x 480 VGA display. It costs approximately \$2,325, and AST says that it expects only 4,500 units to be shipped this in 1991.

Altera's attempt

Muskegon, back at Comdex, Altera was showing off its 6.3 pound, \$2,999 386SX notebook. It comes with the, by now standard 1Mb of RAM, expandable to 5Mb. However, its VGA display makes use of both LCD and cold cathode fluorescent technology (CCFL) to provide 32 shades of grey. The next step up the line from Altera is a 60Mb hard drive version due later this year.

Fujitsu and AST: handhelds

At the same time as these machines were previewed, both Fujitsu and AST were showing off their latest 32-bit personal computers in Japan.

Fujitsu came forward with its FMS0NEX machine. At its heart is a 16MHz 386SX processor. Three types of drive are bundled with the computer: a 3.5-inch 1.44Mb floppy drive, a logical 1.25 RAM drive, and an

and have MS-DOS 4.1, and laptop built into ROM. Ports are provided with an 0.7 inch thick add-on port called ePad. This has an analogue colour port, 3.5-inch floppy drive, Disney Sound digital audio speaker system, and a CD-ROM compatible SCSI drive.

The official launch date for the computers is late June, with the ePad to follow in July.

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The C200 M50/H40 is the flagship of the range and comes with 2Mb of RAM, a 13ms 120MB hard drive and a 2400 bits per second floppy-compatible modem. The modular acquires one of the machines four available expansion slots.

According to a spokesman for Canon, the M50/H40 and M50/H120 will ship in the U.S. from next month onwards. The M50/H40 ships in August.

NOTEBOOKS: SPECS ARE UP AS PRICES FALL

As data communication speeds up, the world shrinks, and personal computing follows suite, Comdex saw a glut of portable power with notebook, laptop and handheld computer launches announced.

The world's first notebook computer using Intel's latest 80486 chip was on show. However, the 386 is not dead yet, as a number of previews and launches illustrated. Despite this, a number of manufacturers are already having to drop the prices of their existing 286 and 386 machines in anticipation of the greater processing power offered by the 486.

THE RISING STARS

The Notebook Computer Co: World's First 486 notebook

The seven-inch Notebook

Canon fires at the home and office

Canon has released three 32MHz 80386SX-based PCs aimed at the home and office marketplace. The machines, introduced at Comdex Spring, are bundled with MS-DOS 4.01, Microsoft Works, Windows and a starter kit for the Prodigy on-line service.

Canon is offering each of the three machines - the C200 M50/H40, M50/H80 and M50/H120 - in four configurations: standard, which includes the computer, keyboard, software and PS/2 mouse; standard with the addition of a VGA monitor; standard with the addition of a Canon bubblejet printer and paper feeder; and maximum, with both a VGA monitor and bubblejet printer.

Pricing on the machines starts at \$1,999 for a standard configuration of the C200 M50/H40, to \$3,568 for the Maximum configuration of the High-end

C200 M50/H120

The C200 M50/H40 has a 40Mb hard drive with a 28ms access speed, 1Mb of RAM (expandable to 6Mb) and four 16-bit expansion slots. Other features include VGA graphics, two serial ports and a single parallel port. The C200 M50/H80 comes with a 13ms 80MB hard drive and 2Mb of RAM. Other specifications are as with the M50/H40.

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THE FALLEN HEROES

With notebooks rapidly taking over as the next stage in PC evolution, some desk, and even laptop machines felt it was time for price cuts.

Zenith at the nadir

Zenith announced that it was cutting the prices of its laptop and desktop machines across the board. This is the second price cut made by the company in 60 days.

The unhappy star of the price massacre is the Z-386/33C model 150 desktop. This falls in price by \$1,000. The Supersport 3968X Model 40 follows this with a \$900 cut. The Z-386/25 model 1, the only computer in Zenith's range not to include DOS 4.1 and Windows 3 on the hard disk falls by \$1,000.

Texas Instruments tune down

TI is also to slash the prices of its computer, specifically the TravelMate series of 286 and 386 notebooks. The TravelMate 3000 with a 20Mb hard disk, which only went on sale in December 1990, drops from \$5,499 to \$3,199. While the 286-based TravelMate 2000 has \$830 shored from its price to take it from \$3,199 to \$2,369.

Samsung the same song

Samsung was following suit with price cuts on its 16MHz NoteMaster series of notebooks and its LAN workstation and file server systems.

The 20Mb hard drive version



Is this the lightest laser ever?

Personal computers are not the only pieces of computing hardware which can be struck to lap size while retaining power. The machine with the lightest 'laser' factor at Comdex this year is undoubtedly Canon's P400 Notebook 'Laser' Printer which weighs a mere 2.5 pounds (including battery), for only \$549.

It's 11.5 x 2.5 x 2 inches, and sits next to your notebook computer. Canon calls the P400 the 'World's Smallest Laser-Quality Printer.' It prints on plain paper, including envelopes and labels, and its software is compatible with Canon GSK, Epson and IBM emulations.

and exhibits the latest multi-media, 486 computing, and more . . .

PC's FUTURE UNFOLDS



• Texas Instruments follows a recent trend and slashes the prices of its TransMate series. Was this because of the world recession or is ready the company for a new batch of 486-based machines?

falls 10 per cent, from \$3,999 to \$2,799. Its 40 meg Novamaster slips by 25 per cent from \$4,299 to \$3,099, and the 60Mhz machine drops 24 per cent from \$4,499 to \$3,399.

It's not all bad news for Samsung, however; it has also revealed plans for its first Unibased, 18 inch terminal. Based on AMD's 29000 RISC processor, it is called the SGT-15K Windows System. On top of this is the System master 486/33Tz, a 32MHz machine based on the 486, EISA architecture. Entry level price is \$7,699 rising to \$33,000. ■

Playing a new Ensemble

There is another Graphic User Interface for the PC aside from the much talked about Windows 3.1, and it's called Gameworks Ensemble. The upgrade to this software was announced at Comdex. The new version 1.2 of Ensemble builds on the original version, and includes a number of new features, including support for more than 300 printers and a 300,000 word spelling checker. The package is scheduled to ship at the end of June. Registered users will be entitled to upgrade free of charge. Pricing remains unchanged at \$159-95.

Version 1.2 addresses the most immediate upgrade features

that our users have requested," said Brian Dougherty, CEO of the company. "We wanted to provide Ensemble 1.2 free to registered users of v1.0 in recognition of their early commitment to the company and the product."

A new licensing deal allows the Philips to bundle Ensemble with all of its PCs. Initially, plans call for Philips to bundle Ensemble 1.2 with its 386, 386SX and new 286 notebook PCs. Gameworks also revealed that its OEM commitments now exceed 600,000 units.

According to Dougherty, European language editions are ready to ship.



Ensemble
Gameworks
Ensemble
Ensemble 1.2 (Shareware) - Version 1.2 (Shareware) - © 1991 G. W. Gameworks, Inc.

• There's more to life on the PC than Windows at Gameworks shows with its latest version of the Ensemble graphics user interface due here soon.



Going for Gold

Goldstar was also present at Comdex. It exhibited two of its more recent PC productions in the form of the laptop GS-430, and the 386SX-based GS333 desktop machine. The latter runs at a sprints 33MHz.

While these machines are not

expected to be seen in the UK until next year, there is a UK equivalent system to the 333 all ready available here.

This is the GS-335 Tower system which costs £2,888.82. It is available from Silica Shop on 081 309 111.

24-bit image editing for your PC

Another big hit at Comdex was PictArts new image editing program PictArts.

Designed for 5800, the package is setting for graphic artists wishing to work quickly with 24-bit images and enables users to edit, colourise and retouch up to

16 images at once in a multiple window environment. PictArts uses a VGA interface running off a Texas Instruments' 3400 graphics processor board.

For more information call PictArts on 0101 415 323 6592.

Modern multimedia

"The personalised information revolution is just beginning", he claimed. IBM vice-president, Michael Brown, in a special address to Comdex crowds. The value of multimedia lies in personalisation, not only do people want it, they're willing to pay for it", he predicted, "and that represents an enormous opportunity". IBM's vision of personalised information systems includes computerised television, intelligent information selectors and vast volumes of data and sensory stimulus all connected and packed on one disc.

Smart TV is one of the projected movie spinners, with Brown predicting the advent of an interactive television that can monitor all news feeds and selectively tape any programs that it knows will suit your personal tastes.

While this is still some way off, Brown gave details of a current project being jointly developed by IBM and Synapse Technologies. The Columbus Project is an "interactive learning curriculum" that covers the life and times of Christopher Columbus containing more than 150 hours of material.

However, Brown insists that multimedia is still in its infancy and that three fundamental things need to happen for it to flourish. Firstly,

developers of multimedia applications must reduce development times, secondly, the price of authoring and end-user systems must drop and finally common standards need to be forged. Extending on the challenge further, Brown presented a top ten list of developments which must occur for personal multimedia to emerge.

Excerpts from Columbus's diaries, history books, reference works, film clips and interviews are all cross-referenced

Here's the list in descending order.

- IBM, Microsoft, Apple and Commodore must agree on data standards and applications programming interfaces
- CD-ROM drive prices need to drop to below \$200 and capacities need to increase
- PCs with full-motion video abilities should only cost a similar amount more than other PCs like a colour monitor costs more than a mouse monitor.



- Applications developers must have access to all the required tools and services from source
- Customers must drive the industry not vice versa
- A national clearing house of copyright material should be set up to allow easy access to 'media' objects
- Easy access to multimedia data wherever it resides
- Full-motion video titles must sell for around \$25 and the players for less than \$500
- There must be an abundance of top-notch business titles launched as soon as possible
- The information interface should be so personal and usable that millions more people will use multimedia in their everyday lives.

Instant photo quality on a printer

Although it costs \$18,000, Mitsubishi's CHE-3449 full-colour printer is a bargain for anyone wanting photographic quality results.

Adaptive printers were amazed to see high-resolution scans of themselves appearing minutes later as glossy photographs. The machine offers 24-bit colour and 300 dpi resolution, working with a process of 'non-impact dye-sublimation' thermal printing.

Print speed varies according to colour mode, with a speed of 150 seconds per page in 64 tone mode displaying 250,000 colours, and 300 seconds per page in 256 tone mode, capable of displaying 16 million colours.

More information from Mitsubishi New York on 0101 514 957 4999

Opening a new window

Microsoft has announced the launch of Visual BASIC, a programming bundle for its Windows operating system.

The package combines a Windows compiler, visual design tools and a powerful BASIC interpreter. Microsoft chief executive officer Bill Gates said of the bundle: "We set out to create the fastest, easiest way to program for Windows. We also wanted this tool to appeal to the broad mainstream of people interested in programming for Windows."

Programs created using Visual BASIC can be compiled into EXE (executable) files and then freely distributed. And as far as Microsoft is concerned users don't even have to pay royalties on this.

Companies already using the system include Reuters and Credit Lyonnais.

To use Visual BASIC you will require Windows 3.0, a minimum of a 286 PC, hard disk, mouse, and 1Mb of memory. Price for the bundle is £163.32. However, if you currently own Microsoft BASIC development kit, and Microsoft QuickBASIC - and have registered as such - you can upgrade for £92.82.

Call 0734 391123. ■

IBM's speedy ceramic chip

IBM is claiming that its latest 121-chip ceramic package has broken all records for the transmissions of electronic signals. The company has proudly announced that the system can transmit at 280 million miles per hour.

This comes at a time when Gallium Arsenide (GaAs) is coming to the fore as the fastest medium for data, which is basically electronic signal transmission. IBM's ceramic package is still years from commercial application, but it does offer serious competition to both GaAs and silicon-based systems. ■

Boxing clever

Are you a disk junkie? Do you own more floppies than you can handle? Computer furniture manufacturer Accutrade reckons it has the solution.

The Disk File comprises 5.25-inch and 3.5-inch disks boxes, which can be built into blocks to whatever size you require. So, instead of hunting for that obscure program, you will find it neatly filed away in its own box. Price is £60 for 300 disks. ■



Time travel with a difference

If time travelling maniacs are your idea of good sport then check out Electronic Arts' Zone Warrior.

It's a frantic multi-directional platform game featuring five time zones of human history. You'll be persuaded to chase an uncanny band of aliens who have stumbled across a time hole and decided to wreak terrible havoc through the ages.

The five spots you'll be visiting include Prehistoric, Egyptian, Medieval, Ancient Japanese and, of course, Post Nuclear. Don't forget to pack your big guns, there'll be plenty of badies to eliminate. It's out on the



• **Zone Warrior: those ancient Aliens give a warm welcome to their alien kinfolk from the future.**

ST, Amiga and PC at the end of the month for £25.99. ■

Microsoft versus Apple: the battle takes a new twist

GRAPHICS ADD-ON SPEEDS WINDOWS

The battle between Microsoft Windows and Apple's graphic interface, System 7, heated up this week with news of a new graphic controller chip.

The W9500 from Wetek in the US is claimed by its manufacturers to speed up the running of Windows on 286, 386, and the new 486-based PCs.

The chip works by incorporating the key Windows commands and functions into its hardware. It passes the previously software-based screen-drive calls to the PC's video controller chip. This lightens the workload of the main processor and consequently speeds up operations of both the Windows shell and of applications running under it.

Wetek claims that the chip is compatible with the video graphics (VGA) screen standard, and

will also work with existing non-Windows based software. It works in monochrome providing 2,048 x 1,024 pixels resolution. It 16 colour mode, 800 x 600 pixels are available, and 256 colours gives 640 x 480 pixels.

Industry pundits have been predicting such a chip since the initial launch of the Windows system. The added speed which it claimed will be provided by the chip provides a massive lift to Microsoft's aspirations in the pro-longed Mac versus PC battle.

The release three weeks ago of Apple's critically acclaimed System 7 operating system, which includes 3D screen effects, enhanced screen refreshes and a whole host of user friendly devices, had many computer journalists, users and observers once again looking



• **Pundits have been predicting a Windows accelerator since its inception. Now that one has finally arrived, does it offer the speed needed to beat Apple?**

Apple's virtues at the expense of Microsoft's.

Microsoft is firmly backing Wetek's chip. Its Windows group manager in the US, Rich Abel said: "The inclusion of graphics acceleration functions en-

hances the performance of GUI environments such as Windows, thus benefiting the user. Microsoft is pleased that Wetek will offer a user interface controller supporting Windows."

Microsoft's plans to further enhance the appeal of Windows with additions of audio and video processing will also be boosted by the Wetek chip. One of the problems with the system has been the fact that too much has been asked from the central processor and software. Minimum memory requirements for a PC running Windows are 640K, it's "best mode, 2Mb, in 'standard', and a whopping 4Mb in 'enhanced'. The latter mode is considered to be the nearest equivalent to the Macs QX which can be run from a machine with 2Mb of memory. ■

Rats saved by PC program

A computer program has been developed which could help save the lives of laboratory animals in school experiments.

Instead of culling young animals in life, students can simulate dissections on their computers. The PC program was developed by Dr David Greenhalgh at Leeds Polytechnic, who had been given a £27,000 grant from the National Anti-Vivisection Society.

Dr Greenhalgh commented: "This

won't stop vivisection overnight, but it is a significant step forward. Students can use an screen to simulate effects of tests on tissues where drugs are added.

Traditionally, these are types of tissue which have been retrieved from animals killed for anatomy."

He pointed out that the software is also used effective. One laboratory rat costs £15, but the program, which costs £200, can be used again and again. ■



• **Sometimes it leads one even one developing ways to save animals from experiments using computers.**

At a perfect price?

WordPerfect corp is offering a free site licence to users of version 5.1 of its word processor software.

The offer begins on 1 June and lasts for 30 days after this, as yet unconfirmed, release date of WordPerfect for Windows.

A spokeswoman for WordPerfect had to explain: "We don't have a date for the Windows launch as yet. All I can tell you is that it will occur in the third quarter of this year. That is

sometime between June and September".

A free site licence means that users of WordPerfect 5.1 can run both DOS and Windows-based systems on their PCs and still include system support. It does not mean that they get a free copy of WordPerfect for Windows.

A dated proof of purchase is required in order qualify for the offer. For more information call 0932 850350. ■

Alignment fault detected on co-processor socket

AMSTRAD PC 3386: CHIP COULD BLOW

Owners of Amstrad's new PC 3386 model using maths co-processors risk blowing up components because of an installation fault on the co-processor sockets.

Amstrad last week confirmed that a number of 3386 models have been made with the co-processor socket 90 degrees out of line. Users adding a co-processor, who are unaware of the problem, risk blowing the chip.

Stephen O'Brien, a member of the technical support team at leading Amstrad distributor Micro Peripherals, said: "I know there's a problem with the micro processor fits. When the

customer installs the co-processor in the normal way the chip blows. I don't know whether this was a batching problem or whether it's universal. We had three calls from customers with problems and there have been five calls into the department."

Amstrad's technical support department confirmed that modification was a potential danger: "If you're going to fit a maths co-processor you need to check the position of the socket. In some cases it is 90 degrees out of alignment. That means if you plug in a chip in then you'll blow it to Kingdoms Come. You'll have to get an engineer to check it out. "The problem occurs on a

number of machines where the manufacturer put the socket in round the wrong way. If you plug the co-processor into one of these then it will blow."

An Amstrad spokesman said the fault should not cause alarm: "There's no need to get an engineer out, you just have to look at the manual. The layout of the socket is misleading because it can go in two ways. If you put it in the right way then it's OK. If you put it in the wrong way then that's not."

"It is misleading and we are aware of it now. This only occurs on a small initial batch, but if anyone has a problem we will handle it without question." ■



*3386: owners may need help with their co-processors from Amstrad.

Boot out that virus

A virus killer has been launched which, according to its producer, can protect the most vulnerable part of your PC, the boot sector.

PC-kill from AntiSoft Software attaches to the parallel port, and is transparent to the system. It links in the boot sector to wait for any rogue programs, and duly warns of any disks which are infected, before a virus can be installed.

"In tests, it's been totally successful against all known viruses," claimed managing director Chris Ardler. "We expect a similar success rate for detecting future viral threats."

PC-kill costs £149. For more information call 0273 602622. ■

Butler serves up ST program

ST owners are to be offered a 'butler' program packed with useful utilities.

Ramsa's Mortimer can be accessed from within all manner of programs such as word processors, databases and programming languages. It features a text editor, printer spooler, virus detector and keyboard macro maker. There are also a bevy of different little tricks such as a magnifier, quick mouse, clock, calculator and ASCII list.

Mortimer, originally written by German company Onikron, costs £32.99. For more information call 0734 844335. ■

French do an inside job

A French travel agency has run into trouble after using convicts as cut-priced labour in the operation of its computers.

Wagon Lits had subcontracted computerised booking accounts to a penitentiary in Bapaume, Northern France. But the plan to use cheap labour backfired as company chiefs realised that the lines contained the exact times when thousands of families would be taking their holidays.

Fearing that convicts would contact pals on the outside, and arrange burglaries, Wagon Lits hastily cancelled the contract and brought in more reliable employees. ■

Alien animation

Team? programming members have been spending their time 'making some very strange noises into microphones'.

The reason why is that they want to get the right 'slurpy-squishy' sounds for the soon-to-be-released Alien Breed. Not only are weird sounds coming from the crew, so are clues that the game, due for release in three to four weeks time, is the first true 100% game for the Amiga. There are one and two player options, a tonsil sub-game, star weapons, acid pools, speech, and of course the sound effects.

When finally released the game will cost £9.95. For more information contact 0924 368351.



*Alien Breed (next) claims to have just the right 'slurpy-squishy' effects around. Will the game deliver, but the programmers do, they also have a great deal more to say about it...

Portable printing from Brother

Brother is launching its first ink-jet printers, the HJ-770, and portable HJ-100.

The HJ-770 is a 136 column machine which runs at 150 characters per second (cps) and can take sheets of A3 paper in landscape mode.

There are four font styles bundled with it: Roman, San Serif, Braggart (Brother's own font, which is similar to Courier), and Letter Gothic. Downloaded fonts can also be stored as an optional 128K battery-backed RAM card. Three emulations are available as standard, ProPrinter, XL-244, and Epson LQ1050. Brother's own DeskJet printer is also supported.

The portable HJ-100 is the same size as a piece of A4 paper, and is powered by rechargeable NiCad batteries. Brother claims that the batteries will last for 40 pages of printed text before they need recharging.

There is also an optional A/C adaptor available. There are no bundled fonts with this printer, or at least none that Brother is aware of. According to a spokesman for the company: "These printers are so new, that we haven't even seen them".

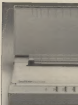
The HJ-770 is priced at £880 and the portable HJ-100 costs £362.

For more information call Brother on 061-330 6531. ■



*Mirway's Flickerfixer, a graphics enhancer board, designed to eliminate flicker problems on Amiga 5000s using high resolution and VGA displays, has been drastically cut in price from £225 to £125.

Flickerfixer removes the scan lines which appear when a monitor is used in interlace mode, and, as its name suggests, it removes the flicker which occurs in interlaced mode. The firm claims the change is due to a 'high volume of sales'. Call 081-541 5444. ■



*The Brother HJ-100, portable ink-jet printing could be yours, but it's so new not even Brother knows where all the fonts come from!

NIBBLES

Olivetti price cuts

Olivetti is to cut the prices of its range of PCs range of PCs by up to 1.9% per cent.

A 32MB PC3286 now costs £397 as opposed to £1,232. The 40MB version now costs £1,115, previously the price was £1,350. However, when the recent rises in the VRT rate are taken into consideration, this several price cut disappears. As do the cuts on the PC3286S (32MB) is a 10.7% per cent, the 40MB is 10 per cent, the PC386 (32MB version VLT) by 5.8 per cent. Call Olivetti on 0908 690790.

Speedy fox Pop

Fox Software is claiming that its new database management system FoxPro 2 is 'revolutionary'. It justifies this by claiming that the system provides data access speeds which are: 'hundreds of times faster than ever before'.

Apparently FoxPro 2 is capable of manipulating gigabytes of data. It runs on PCs from the AT up to the latest 486 computers. A single user licence for the system costs £699.

Sam old story

Team Sam, the company which was once incorporated as Miles Gordon Technology (MGT) and it went bust, has announced three new products for the Sam Group. They are all music oriented: the MIDI Sequencer costs £46.95; Sound Sampler includes a microphone, software, and manual, for £35; and Music Master drives the Group's own synthesizer via the QWERTY keyboard, price not released. Call 0152 700 300.

Scandy Harry

Legitech is to bring out Scanscan model 32 for the PC. This monochrome hand scanner can come as a stand alone piece of kit, or bundled with Gethword, its optical character recognition (OCR) software. Not only does the Scanscan run under DOS, it is also configurable for Windows.

For now it is only available in the US at £295 for the scanner, £399 for the scanner and OCR software.

Colourful chips

The world's first computer chip capable of controlling colour liquid crystal displays (LCDs) has been announced in Japan. The rather unexcitingly named Micro-PD16426N chip, is able to manipulate up to 4,096 colours on screen simultaneously.

Computing development could switch from West to East

UK PAYS TO JOIN JAPANESE IN AI

Japan is looking to the UK for help with its project to develop the next, or fifth, generation in computing technology.

Japan's Institute for the New Generation of Computer Technology (ICOT) plans to develop mainframe, and consequently personal, computers which rely on Artificial Intelligence (AI), parallel processing and inference technology (known popularly as 'fuzzy' logic). It has approached Bristol University and Imperial College, London for assistance.

EUROPEAN CONSTRAINT

However, the notion of two major UK universities joining forces with the Japanese, at a time when Europe is attempting to forge itself into a major world trading power, is likely to draw constrained, or even negative reaction from across the channel. US reaction is also likely to

be muted. If the Japanese are successful in their developments, the entire focus of computing development could switch from West to East.

Both Bristol University and Imperial College seem to be highly sensitive to these aspects judging from their responses.

In a prepared statement, Prof David H D Warren of Bristol's Computer Science department said: 'ICOT has proposed installing two of its PSI sequential inference machines at the University of Bristol. These will be attached by high speed link to the MultiPSI parallel inference machine at ICOT in Tokyo.'

'Discussions are proceeding with the Department of Trade and Industry (DTI) to support the UK side of the collaboration. Professor Keith Clarke's group at Imperial College London may also be involved, and share the link to ICOT's PSI'.

As we went to press,

Professor Keith Clarke had not yet replied to our phone calls.

It is an area in which Bristol University has an excellent track record - for example with the snooker playing robot featured on the BBC's QED program. The Japanese have therefore proposed an agreement for Bristol University to develop an AI-based programming language on its behalf.

The ICOT project was initiated in the summer of 1982 by the Ministry of International Trade and Industry (MITI) in Tokyo, and is now in its penultimate year.

HARD CASH IS WAY IN

Although collaboration from outside Japan is welcomed by ICOT, the way in has to be bought with hard cash. Consequently, Bristol University is now having to seek funding from the DTI. Jim Devoson at the DTI's Technology and Research department told

us: 'I try to keep up with ICOT, but I don't know a great deal about Imperial or Bristol. If it is a question of a university contacting the DTI for funding, I cannot comment'.

SIXTH GENERATION

The implications for UK computing, which saw its last remaining mainframe manufacturer, ICL, fall into Japanese control earlier this year, extend beyond the end of the ICOT project. As *Express* reported in its 16 February issue, a £770 million, sixth generation project is due to begin in Japan in 1992.

The sixth generation project is to concentrate on neural networks - a form of computing which derives directly from the kind of AI work which it is to be carried out in Bristol. With computers already installed in Bristol, the UK will be in an ideal position to take a leading role in this development. ■

Claris helps Macs to the future

Claris is launching three System 7 compatible software bundles for the Mac.

The Pinpoint spreadsheet is said by the company to be 'the flagship of the Claris System 7 family'. It enables users to produce full colour graphic representations of their number juggling. These include 3D, wire frame, and contour charts and scripting, or macro, facilities to automate repetitive tasks.

MacWrite Pro, is the next launch. This is an upgrade of Claris' word processing system familiar to Mac users. Upgrades include table creation and manipulation, paragraph and character style sheets, multiple headers and footers, and a 81 colours. Graphic formats such as TIFF, PICT2, and EPS are supported. MacProject II, a project management tool, is the last of the launches. It provides users

with the ability to produce schedules, project graphs, and tables.

Material from all of these programs can be ported from one to another without loss of formatting.

Both systems make use of System 7's functions such as 'publish and subscribe', and Bubble Help.

Pinpoint costs £323, MacWrite Pro is £205, and MacProject II is £464. ■

Noteable system

NCR has entered the portable PC market with a 5.6lb, 390SX notebook PC.

The NCR 5120 is 1.7 inches thick, 6.3 inches wide and 13.6 inches wide, about the size of a ream of A4 paper. It includes a 30 or 60MB hard drive as standard, complemented by a 3.5-inch, 1.44MB floppy drive.

The screen is a monochrome, backlit, VGA liquid crystal display. Expansion is via serial, parallel, mouse and video ports, as well as an external bus connector. 1MB of 68M comes as standard and can be expanded to 5MB. An optional internal fax/modem is also on the cards. This allows lines to be sent via V27 protocol at 4,800 baud and V29 at 5,600 baud. The entry level machine with 1MB RAM, 30MB hard drive, single floppy, and VGA monitor costs £3,724.75. ■



• NCR's paperweight portable PC, available with optional internal fax/modem. Call NCR on 071 725 8248



Space age printing

Manneeman Tally's latest portable printer, the MT735, has been short-listed to fly aboard the space shuttle Columbia. The printer has already been tested in a weightless environment.

The MT735 is a six pages per minute machine, it measures 29cm x 22cm x 25cm, and weighs 3.8kg. Power is from rechargeable batteries. It also has a cut-sheet feeder which can take 80 sheets of A4. Print resolution is 300 x 300 dots per inch. It cost £1,760.15. Call 0734 788711. ■

CD goes on

PRODUCT: CD-ROM Drive
NAME: Toshiba XM-3301B



• Driving forces behind the Mac and PC, or mainly CD entries into the world of data storage?

The Mac and the PC meet and agree at long last. This drive, available in the UK via Highland Computers, comes from Toshiba. The company claims that the drive has an average access time of 325 milliseconds (ms). Users are not limited to one size of Compact Disc either, both 12cm and 8cm versions are catered for. They also support both audio and data transmission.

The drives come in internal, external, and external four-draw tower form and are compatible with PC-AT, PS/2, Mac, and Toshiba laptops.

Price: This depends on which configuration you require. Toshiba were 'unable' to give us an entry level or top-end price. However, we will have this information for you in next week's issue.

Availability: Now
Target users: According to Toshiba: "Sophisticated Mac and PC users who need high speed access to data on tape".

Contact: 0444 235000
Perceived competition: Hitachi

Affordable
CD-ROM

PRODUCT: CD-ROM Drive
NAME: Philips CDD461



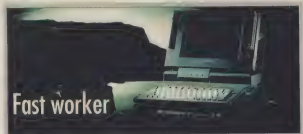
• The cheapest CD-ROM is now in Philips' new CDD461

At last an affordable CD-ROM drive for the PC. The CDD461 from Philips, which is collaborating with Sony on CD development at the moment, is compatible with PC/XTs and PS/2 computers. One of the major factors about this drive is that it features audio-out with front panel controls - it even has the tray loading system familiar to owners of stereo CD players.

A range of applications are already available for the drive, including Philips'

WHAT'S NEW

The quick reference guide to all the newest of the new in computing this week.



• It looks expensive now, but this machine's descendants could be affordable by the end of next year. So what does this powerhouse offer?

PRODUCT: RISC portable workstation
NAME: Sony NWS-3260

Sony has just announced the launch of this RISC portable RISC workstation. The company claims: "Quite simply there has never been such high-resolution and power in a portable computer before." With the applications of this laptop the claim is difficult to doubt.

It delivers 37 million instructions per second (mips), with 1.8 million floating point operations per second (MFLOPS).

UNIX 4.3, X/Windows 1.1 and Sony's NewsDesk user interface are incorporated into the system in their complete formats.

The central processing unit (CPU) is MIPS Computer System's R3200. This is complemented by the R3210 floating point accelerator.

16MB of main memory come as standard, along with a 400Mb internal hard disk, and a 1.44Mb floppy drive. The monitor is an 11 inch monochrome liquid crystal display (LCD). Like Sony's NWS-3865 (see the Nibbles column on

page 38) the NWS-3260 comes with a built in Ethernet interface to accompany its parallel, serial and SCSI ports.

PRICE: £10,563.25
AVAILABILITY: Now
TARGET USERS: Software engineers, and anyone who can afford this high level of computing.

CONTACT: Sony Microsystems on 0184 467225

PERCEIVED COMPETITION: None

European Business Guide. It can be controlled as an MSDOS extension which makes installation an easy process.

Price: £466.82

Availability: Now

Target users: In the words of a Philips spokesperson who asked to Express this week: "Anyone who wants a CD-ROM player at a price they can afford".

Contact: Philips on 0306 75777
Perceived competition: Hitachi and Toshiba (although neither can provide a drive at this price)

Rob-Manager

PRODUCT: Stats and monitoring software
NAME: Informer

Informer is designed to be proactive in tracking possible trouble spots or UNIX-based systems. The software comes with pre-defined areas at which to look, however these can be further configured by the user.

The software monitors a system and produces graphical illustrations of the ways in which single users, or groups of

users, are making use of it. This allows managers to produce invoices and reports for each department.

A 'cyber' aspect of the software is a 'module' called Robot which occasionally logs on to the system as a pseudo-user. It then carries out a number of the tasks which a typical user would do and is then able to measure current response time, and relay the data back to the manager.

Price: £3,519.12

Availability: Now

TARGET users: UNIX system managers

Contact: Pitman Professional Systems 0737 63881

Perceived competition: None

Lease, lease me

PRODUCT: Lease line modem
NAME: Nokia H1920

This one is strictly for the business user, but we thought that it would be of passing interest to the curious aficionados amongst you.

The Nokia can handle a massive data transmission rate of 19,200 bits per second (bps), as well as a wide range of lower rates including 18,000. It is designed as a four-line, point to point,

lease line piece of hardware. It supports V33, V29 and V27 bis standards.

A lease line modem is one designed to be used for private communications rather than over the public telephone lines - in-house data communications for businesses for example.



• Do you need secure in-house communications? Nokia's lease-line modem has all the speed and security you're after

Price: This depends on your specific needs and the size of the system you are setting up. So give Nokia a call

Availability: Now
Target users: Businesses, and users who require rapid data communication over private lines.

Contact: Perceived competition: Nokia were not prepared to say. Nokia on 080 569 7700

Hard Drives!!!

Our drives feature the same ICD case-external SCSI ID changer, external SCSI port, and DMA through port. But we now feature Plus Impulse Drives (A Quantum company) with a 2 year warranty, and a 64K cache on drive. All our drives have clocks!

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ICD w/Plus 40Meg 12ms	£425
Bare Plus Impulse 40Meg 12ms	£255
Bare Plus Impulse 52Meg 11ms	£269
Bare Plus Impulse 105Meg 11ms	£340
SYQUEST SQ-555 based drive:	
The famous ZCS-44 removable extra cartridge	£639
a three-pack	£231
Bare SQ-555 SCSI (w/cart)	£431

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The Megafile 44 is a SYQUEST.

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Drives come set for US, UK or other power.
They come with PD software.

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Others - 4mb	£235
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TT SIMMs	£47

FREE POST:

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Quick ST 2.22	£19
Turbo ST	£28
Neodesk v.3	£34
UIS 3	£18
PageStream	£104
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Calamus	£195
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Outline	£172

We guarantee all hardware - we even pay return shipping

New Gadgets (by Small)!!! 68030 SST

Go to TT speed on your ST with a 68030 chip. Then you can add Fast RAM (up to 8 MB), and a coprocessor.

Bare Board (needs A, B, or C)	£435
Option 'A' - 16mbhz 68030	£145
Option 'B' - 16mbhz 68030, 4 1Mb SIMMs	£335
Option 'C' - 33mbhz 68030, 68882, 4 SIMMs	£579
Option 'D' - 4 1Mb SIMMs	£189

Shipped with a 68030 version of TOS.

MegaTalk

A fast communications board for Mega STs. Adds two serial ports (up to 960,000 baud!!!) and a true SCSI port for Spectres (v. 3 or higher) this means...

AppleTalk!

Apple MIDI!

MAC hard drives!

In Atari mode you get 3 serial (BIOS drivers included)

Spectre v. 3.1 £204

ICD Adspeed St 8/16 mhz £210 with 64k cache

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- 595 C-Light

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- 500 Creature Island
- 512 Estimating
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- 542 Light Play 1 & 2 for children
- 558 Starblast
- 576 Castle of Doom
- 556 Computer Certified
- 514 Lolly Bug
- 548 Pinball Plus
- 591 The Full Deal
- 585 Star Trek - The Next Generation
- 579 Star Trek - Top Gun Frontier
- 547 Being - Dark Quest
- 564 Colonial Adventure - Intell. Adv.
- 513 Pipitino
- 511 Ruffian
- 580 Fantasy Frontier - Droid game
- 591 Aladdin
- 511 Holy Grail Adventure
- 556 Golden Palace
- 502 Urzine Park
- 500 Dynasties Disk
- 520 Return to Earth
- 562 Lunar Colony vol. 1 to 7
- Various good games

DEMOS

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- 581 Woz Cat
- 598 Deluxe Jordan Slideshow
- 501 Rascal 1911 - Best Demo
- 545 Keith Lloyd Slideshow
- 574 Synapse Violation
- 507 Speed Sport

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- 951 Tally - I Think We're Alone Now
- 888 Dance Mix 101
- 962 Digital Control 1-8
- 900 Blues 8 others
- 930 Linked System - Dance Moves 1-3
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- 965 Acid Long Time
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- 969 Only Dancing
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EXPRESS MAIL

Write and tell Haydn Fitz-Williams what you think! Reach him at: *Express Mail, 30 Monmouth Street, Bath BA1 2BW. Sorry, no personal replies, even with an SAE and remember, only SOME letters win a fiver!*

Time Warp

It seems that a large number of Express readers are stuck in a temporal loop! While I agree that it's not nice to see your machine specific column dropped changed out down, it is a fact of life that we go forward developing new technology.

How much more can be said about the BBC B, Spectrum or whatever 8-bit machine? After all they ruled the roost for many years. 16 and 32-bit machines are new things.

Perhaps there's a new market for a magazine like *Classic Cars* for old computer owners?

M. Jones, Slendered Lanes

PRACTICAL CLASSICS? Seems to me the main problem with owning some of the older machines is knowing when to call it a day. But with all the emulators kicking around these days on the 16-bits it's not as if you can't see all that old

software any longer is it? I don't know about the idea of a specialist magazine though. Anything upto 80 per cent and beyond of any mag's revenues comes from advertising - so I doubt whether there's enough out there to support one.

Cheaper access

Why don't you rig up a deal with a free bulletin board instead of expecting us to correspond via on-line services that cost us money to subscribe to all the place.

Paul Barker, Chesterton Essex

A GOOD point and one we looked into immediately. We've now got an area on Aspects where you can leave mail. So, get in touch on 091 792 0260.

Tack tips

One of the columnists in the June issue Bill Alan ST user appears to

be clinically insane (well what did you expect). Ed. He advises in the beginners column for new users of STs, that it is okay to leave a floppy disk on top of a TV for a week, under a telephone, rub it with a magnet, subject it to heat etc and it will be OK. He claims that if the data is lost it's because the disk is at fault to begin with. If this is the kind of advice that a popular mag gives to its new readers then they would be better off not giving it at all.

Clive Parker, Pitt Bristol

SOUND TECHIE advice is an essential part of any magazine's service to its readers. That's why we were glad to replace Uncle Tech Tips with Big Keith.

Copy cats

Re: the piracy debate. It is next to impossible to produce an uncopyable system. For example, cartridges were supposed to have stopped pirates but, as some of our readers may be aware, there is an illegal Nintendo cart with 80 games on it floating around on the black market.

CD-ROM games or software might be uncopyable at the moment but some bright spark will find a way to beat the system. I used to hack games - why? because they were there. It's no good finding game hackers or threatening jail that just makes it

more exciting. What's needed is re-education. The industry could find a lot of excellent programmers just sitting at home and it could be beneficial for the industry to talk to pirates. This would give the industry the chance to turn the pirates on each other.

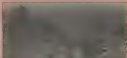
Jon Faraday, Penn Mablehampton

I THINK we should begin to make a distinction between pirates and hackers. I can see people hacking games for the sake of the coding challenge - this seems to be somewhat harmless and entirely different from people who crack, swap and sell the software on. But I guess in practical terms it's a meaningless distinction. Who's to prove the guy who had £16,500 worth of copied games the other week didn't crack them himself?

On-line mail

Open readers in Germany who register *Express* (www.express.de) and *Aspects* (www.aspects.de) can receive our bulletins every day (10.00.00) when you call (091) 792 0260 and use the code 123456789. We also have a German version of *Express*. Call us on (091) 792 0260 and we'll send you the German version of *Express* and *Aspects* (091) 792 0260. Tel: 091 792 0260.

ULTRA-CASH MAGNETIC LOOT ATTRACTION UTILITIES - PARTS 5 & 6



* Yes, a life of luxury is like a life of pain. All you need is a self and the, a few qualifications and access to a computer

5 Here's a year guaranteed to make cash flow your mine. Hang around any College of Further Education at the end of July when they're enrolling the first classes.

Ten minutes before enrolment is due to stop, stroll over to the girl on the computer who's taking the details and say: "The principal wants to see you in his

office immediately, I'll look after this." When she disappears, use the two floggles concealed in your undergarments to divert the PC of its program and data files.

Once back at home, you can load the program and data, throw away all the normal course lists and concentrate on the sort of courses that only an idiot would sign up for. By extracting the names and addresses from all the Underwater Hang-Gliding, Astronomy for beginners, travel photography and Basket Weaving course members, you'll have a list of names that you can throw into a random sort routine. Next, using the office PC and laser printer you can knock up some professional looking compendious dictionary and mailshot. Don't let it be an ordinary people will pay hundreds of pounds year in year out for computer design. These sorts are the key to your personal goldmine.

Major Roy Jones, Milton Keynes

OF COURSE this sensational loot attraction utility shouldn't be loaded by anyone possessing the slightest modicum of respect for his fellow human beings. It could seriously damage your health.

6 Here's a 'loot attractor' I came across a few years ago which I thought you might like to know about. You'll need 5 'O' levels or so but the only cash outlay required is to buy yourself a suit and tie. You then write to every high street bank in your immediate locale requesting an interview with the manager. You then visit the bank. Ask the manager if you can have a few days or so until you receive a confirmation. You then start work. It's a beginning. In the following month as a clerk. After five years you will become Assistant Branch Manager, learn all the passwords, transfer as much cash as you want to your own private Swiss account and disappear in a life of luxury to Brazil. Simple.

John Parkinson, Rio De Janeiro

Blind androids

The Android from Rhyt should have his 'superior' digital scanning checked out. If it was working properly he would have noticed that the game being played on the Atari 6-bit bit DART!, along with Missile Command was in fact Caverns of Mars.

Chris Roberts, Prestatyn, Cymru

Dumb androids

OK, OK, but you know how hard English can be for non-humans. I mean when was the last time you talked to Tim Smith.

The Android, Rhyt Cymru

I TALK to Tim Smith every working day and I think I can safely say that Tim exhibits all the symptoms of a condition known as 'singular genius'. This is because only he knows what the hell he's talking about but he finds it so difficult to explain to himself in terms that he can clearly understand that he believes that he's smarter than he thinks. Try filtering that through your minds' excessive feedback circuitry and of droidy chummy ol!

Mole hunt

A bit obvious, isn't it? Much as Jeff Walker's JAM deserves the publicity, plugging it every second week in the User Group Spotlight is a wee bit OTT, no? And the weeks that JAM isn't mentioned, Steve Williams' WAGO gets the spotlight. Could it be anything but with the long standing connection between Messrs. Pomrat, Walker & Williams? I think we should be told.

Steven C. Russell, Glasgow, Scotland

YES I HAD noticed that frequent bias myself. I'll get Andy Giller to sort him out for you. Any particular blunt instrument you'd like employed?

We might do

Do they mean us? Old Holston's column NCE132 PAGE 16:

"During an interview published in a well known UK monthly Amiga magazine"

Spotlight column NCE132 page 45:

"JAM was the brainchild of ex-Amiga Computing editor Jeff Walker..."

I checked with Jason B and he reckons in the first instance it was creative editing that translated Amiga Computing into "...a well known..."

When we mention the excellent work NCE has done on the "Open-to-Open" scam, I don't credit - "A well known UK weekly computer news magazine"

Amiga Computing, Macclesfield, Cheshire

Or maybe not

Heeee... on newspapers I was taught never to mention the opposition. These days I think that's rather petty; if your mag is any good people won't suddenly defect as soon as they realise there's another available.

Barnaby Page, Ludlow, Shropshire

GOOD LORD! What am I doing? That's not news for ST User and Amiga Computing, JAM and WAGO and even Mr. Page of ProPulse all in one issue. What more can I say other than rush out and buy all their mags right away! Honestly. Alternatively you might prefer to take all your hard earned money and throw it in the nearest canal.

Dolphin shock

Why do you feel it necessary to print photos of naked dolphins frolicking provocatively in hotel swimming pools? This is just the kind of gratuitous pornographic imagery which turns ordinary men into raging sub-aquatic beasts! rapists, I fear, are horrified.

Ed Pearson, Manchester

AN APPALLING lapse I must admit. It just goes to show how amoral we're all become to crude images of this 'brutal' animal variety. I am at this very moment slapping myself vigorously with wet fish as penance.

Mass debate

The computer world is in severe danger of disappearing up its own posterior. And for once, I am not talking about the ST v Amiga debate. This time what is really getting on my case is the Mac v PC mass-debate.

Windows Smasher was your headline. Surely not. Why do you the media have to play one perfectly good machine and OS off against another. Windows and System 7 - not that I have used the latter - appear to be as good as each other.

I have been using a PC for some four years now, with upgrades, and I don't want a 'very new Mac'. The PC and MS-DOS works fine. Windows does the business, and frankly the Mac and the PC are worlds apart. All any

one really uses the Mac for his high-end STP. The PC is used in serious business.

Basically, as a piece don't start a 'My Mac is better than your PC'. The Mac has a lot of catching up to do in Europe, no one I have met has seen one, let alone owns one. Finally it is best left to the arty, creative types who can get the most from it.

Sorry this is as unstructured but more I think about it, the angrier I get.

Mark Foster, Brighton.

OK HOW ABOUT us stating an argument right here? The best thing about PCs is that they're infinitely upgradeable. Which is just as well really since 90 per cent of them are dinosaurs. Before Windows 3 you needed a degree in computer science to use one effectively and even now you need a 386SX with random memory which 9 out of 10 PC owners don't own.

1st of many?

I thought your comment about Atari last week was totally over the top. Leader of the Pack was a stiles song not a titles one!

Kelly Burns, York

THANKS FOR that attention to detail Kelly. For a moment I thought I was going to have to duck from all the flak they're taking up in editorial.

SWOT was it?

So why didn't you print Bill of the Atari SWOT analysis last week then - ran out of nerve did we?

John Fisher, Clifton Nottingham

JUST A MISTAKE I'm told. Though I reckon we should just have run it as a full page in itself - it's not often a leading company honestly assesses its Strengths, Weaknesses, Opportunities and Threats in public.

Cooking tips

When are you going to start covering the computers that we see in everyday life without realising that they are computers?

I looked around my home last week and found several. The washing machine, microwave, oven, central heating, TV and Video all have computers in them for sure and I'm sure some of the other appliances have little logic circuits hiding inside them.

I'm sure that your readers pages could benefit from say a round up of computerised cookers or micro powered microwaves.

ON THE COUCH



The final of a brand new series of psycho-analytical tips for you and your computer. All you have to do is write in with the name of your machine, your favourite software, and the machine you'd most like to own.

Our resident psychiatrist, Dr Clare Anthony, will then lay you down on her leather couch and sort you out good and proper. So write in for a free diagnosis to: Leather Couch Clinic, New Computer Express, 30 Monmouth St, Bath BA1 2BN.

She'll send you a fiver towards the machine of your dreams.

This week, it's Tim Fletting of Basilicos

● MACHINE OWNED:

Atari PC1640

● FAVORITE SOFTWARE:

F-15 Stealth Fighter

● DESIRED MACHINE:

NCube mainframe

Well Tim, this tells me a great deal about the potentially dangerous schism between the dynamics of 'stealth' and 'repression' existing within your super ego. Your unfulfilled desires for unlimited power are repressed through a continual channeling of violence which you live via the fantasy of piloting an unbalanced weapon of war. And you know what us Freudians say about weapons don't you Tim?

Basically, you are in deep trouble, doomed to the inevitable frustration of having to find \$19 million to find a degree of control.

DIAGNOSIS: And you say it well paid job - possibly as chief executive of Apple Computers. Meanwhile, lock yourself up and save money by not seeing anything.

Who knows, maybe you could give away a sachet of hot chick-in-sauce on the cover.

F. Craddock, Poles Bay

IT'S A MESS here already without us having various kitchen items flaring the place. But it might be worthwhile finding out which domestic gadget packs the most chips.



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Note that Amiganuts United hold the worldwide copyright to this program and it will not be available through any other source.

The program is of such high quality that we could easily have put it on sale for £50 or more!

However, Amiganuts and the author, Teijo Kinnunen, want it to be within the reach of all Amiga enthusiasts, so we are keeping the price down.

You can purchase this great program for only £10.00, within Europe, (£15 rest of the world). The price includes return post and packing. Payment in pounds sterling only. If ordering from overseas, send a bankers order/Eurocheque etc. (Credit card orders will not be accepted).

Because of the exceptionally low price, it comes without glossy packaging and one page of printed documentation. (Instructions on the disk)

Please note that you are advised not to purchase this program if you only have the basic half-meg, as it does hog a lot of memory.

A full instruction manual for this program may become available later, but due to the high costs involved, it will be quite expensive!

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877: 1 ACROSS 9 DOWN. A well fledged crossword program. It comes on two disks for only £5.00. Data disks 2 & 3 now ready, each £2.00

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coders that are on the Amiga scene today. Issues 5, 6, 7, 8, 9, 10, 11 now available.

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ACC issue 12 is our birthday issue, (available 15th May), it is a 2 disk set and for the next two months you can buy both disks for £3.00!!

1038: SUPER AMIDASH. Remember that good old Commodore 64 game Boulderdash? Well here is your chance to have that fun again £3.00

1068: MOD PROCESSOR V1.9. Make picture and/or music progs, adjust pic height/width. This version will load 8 Channel

OCTAMED music

£3.50

The following is a very small selection from the Public Domain/Shareware collection that we have collated over the past five years

MED/OCTAMED SAMPLES PACK. Six disks that are packed with samples for use with this excellent music utility (note one is very rude). £8.00

MED V3.10. Although not compatible to OCTAMED, (see above), if you simply want to sinter with the keyboard it will satisfy. (1 Meg is advised) £3.00

1047: TEXTILUS V3.0EN is here! The extra facilities on this new version are unbelievable and would take half a page to describe! £3.00

1067: UEDIT V2.6E. The very latest version of this very popular text/editor prog by Rick Stiles. The new features are very good. £3.00

963: ADAMS FAMILY. Good pics of this infamous family. 1 Meg £1.50

987: NASA PICTURES. Good hi-res pictures of space missions. £1.50

996: POWERPACKER by Nico Francois. Excellent crunch util. £1.50

700: D-COPY V1. Excellent copier program. Full instructions £2.50

794: 6 GOOD DEMOS = a game. The Questor Cowboy

anim. is good £1.50

928: UTILS. The famous Boot-Shop, Boot-Kit + others £2.50

741: North V1.3 (2 disks), C Assembler etc. by Steve Hawtin £5.00

907: SNAKES & LADDERS. Excellent game for the family. 1 Meg £2.00

1018: THINKAHEAD. A real mind boggling game from the clones. £2.00

1093: The excellent AMY versus THE WALKER animation. 1 Meg £1.50

1039: AMI-FX 3. Third in this fractal series. (2 disks) 1 Meg £4.00

1040: BALLOONACY. An excellent game for the children. 1 Meg £2.00

1048: DO THE BARTMAN. A fantastic version by Reehard. 1 Meg £2.00

943: THE DEFINITIVE JARRE SHOW. Good music & pics by HCC £1.50

971: THE MASTER VIRUS KILLER. It recognises and kills over 100 of the pests + other excellent features. (includes hard drive protect) £2.50

990: AMIGA C CLUB MANUAL. V2 is now ready. Loads more info, source and help from Anders Bjerrn. Now Auto-Booting and on four disks £6.00

996: THE LATEST AND EASIEST SETKEYS PROG TO RE-DEFINE YOUR KEYS. Plus a host of other utilities, (Icon design, Iconlib, Clipart etc.) £2.00

1026: STAR TREK MEGADEMO. Another well presented two disk set from Tobias Richter, combining pictures, animation and music. 1 Meg £3.00

1031: GAME COMPIATION. Spacepoker, a good version of the Poker-Blandt. Plus Running and Snakepit, both with full game coding £2.00

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(NOTE! After it's initial purchase, the 1991 updated catalogue will be re-copied, free! if you return it with an order for £15 or more)

AMIGA

- Embrace Mac power with the new A-Max II Plus
- Alternative Image take on Real 3D for ray tracing
- Shock horror! The best Amiga PD future at last

A-MAX 2 PLUS SOON

It's been a long time coming, but *ThunderSoft's* Mac on a card emulator, A-Max II Plus, is almost here. According to UK distributor Entertainment International, the card should be available some time during June/July at a retail price of about £400.

For those of you who have been on *Mac* for the last few months, A-Max II Plus is a plug-in card for the Amiga 2000 onwards that adds the power of an Apple Macintosh to the Amiga. With its built-in AppleTalk connectors, SCSI compatibility and support for direct reading and saving of Mac-formatted disks, as well as saving of Mac-formatted files with standard Amiga drives, A-Max II Plus promises to be a one-stop solution for anyone needing compatibility with the Mac. You can now connect your Amiga to AppleTalk networks and peripherals using Macintosh emulation without the need for a separate host expensive AppleTalk card. Macintosh accessories such as Performer, Vision and Cube can be added without having to install a £200 Mac IIx interface (everything is expensive on the Mac).

You can expect a full review in *W*.

Mac II Plus in a future issue of *Express*. You can find out more in the meantime by phoning 01 on 0255 541212.

LIFE IN THE FAST LANE

I recently received a letter from Mr B. Baxter of Ipswich concerning KDI's recently released A2Speed accelerator card. Mr B. wants to buy the card to install inside his 3 Mbyte A500 but he has found information a little thin on the ground. Well Mr. Baxter, I'd love to tell you all about A2Speed, but *Silix* Systems have still to send me a review model (although they have promised to send it to me on many occasions).

Last week I got the chance to fiddle around with one and I wasn't that impressed. In my opinion, the increase in speed that A2Speed delivers is just not significant enough to justify its £200 price tag. Personally I'd save up and treat myself to a real accelerator accelerator like those produced by *Silix* Systems. For an extra £95 you can get the BS500516, which is a 58020 based 16MHz card. It comes complete with a megabyte of 32-bit RAM with provision for a further 3 Mbytes.

You can expect a full review of the BS5001 in a future issue of *Express* but in the meantime, *Silix* State are on the other end of 0933 650677.

ALTERNATIVE'S REAL 3D

Following the successful launch of *Activision's* Real 3D ray tracing system, *Alternative Image of Leicester* have announced that they have taken on distribution of the new 1.3 version in the UK. The original release was impressive enough, but this latest one boasts features which further enhance what is generally regarded as one of the premier Amiga ray tracing systems.

These include power texture mapping with 8 levels of anti-aliasing, advanced surface mapping tools including bump mapping and clamping, and full support for both IF224 and Targa format 24-bit images. Real 3D is available in both a beginner's version and a *TetraPro* version. The beginner's version costs a mere £142 while the pro version will cost you slightly more - £495, to be precise.

If all this talk of ray tracing has tickled your fancy, then give *Alternative* a bell on 0533 440401.

MED BUGS BUSTED

Those awfully nice beats in Amiga Nuts Under would like you all know that an updated version of *Tom Kivinen's* acclaimed MIDI music composer is now available. According to Ray Bart Frost of AmigaNuts, a couple of small bugs were found in versions 3.0 and 3.10 of MIDI, but these have now been fixed in version

3.11b. Also available from AmigaNuts is a new version of the excellent *8000* Processor program which allows you to play tunes from just about any Sound Tracker close from the Workbench. Version 1.9 supports both MED 3 and Octamed 6-channel files.

For puzzle brains, Mark Meany's Words 2 could be for you. It's a powerful anagram/puzzling solving utility that can make short work of word puzzles games. For more, contact AmigaNuts on 0703 789580.

A DEATH IN THE FAMILY

I'm in a state of mourning at the moment - my beloved Amiga 3000 has curled up its toes and kicked the bucket. During the few months that we've spent together it had served me well, but alas the strain of all that review hardware was too much for it to bear. And one faithful day last Sunday, to be precise it happened - a series of gurus followed by a rather doubling black screen announced that my Amiga was no more.

Thankfully, my beloved machine was still under guarantee, so I seemed that help was just a phone call away. I had heard many horror stories concerning Commodore's National Repair Centre, so my expectations were far from favourable. But, after a quick phone call, I was surprised not only by how helpful the nice people at the NRC were, but the extent of the service. Most companies I have previously encountered have required you to send the faulty equipment back to them at your own expense, but Commodore arranged for

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Containing 120 large-format pages *Mastering Amiga C* is applicable to all major releases of C and is specific to learning C on the Amiga. It assumes no prior knowledge of C and contains many easy to follow tutorials. *Mastering Amiga C* will be available in the first half of May - no cheque or credit cards will be cashed or debited until the book is dispatched. (Order today to avoid delay).

Mastering AmigaDOS - Volumes 1 & 2

The acclaimed two volume set that covers versions 1.2, 1.3, 1.3.3 and 2.4 of AmigaDOS co-authored by AS Consultant Editor and industry guru Mark Smith, alongside with Bruce Smith.

Vol. 1: A complete introductory tutorial on AmigaDOS, 288 pages for just £21.95 including a free Utilities Disk when ordered direct. *Amiga Shopper* said: "... one of the most comprehensive and useful books available on AmigaDOS". - *CHI* Barnham and Jeff Walker.

Vol. 2: A complete reference guide to all commands, 320 pages for just £17.95. *AmigaDOS* said: "You won't find a better guide to, or a more useful book on, the Amiga than this - unless it turns out to be Volume 3!" - *John Walker*.

Ordering: Send cheques/PDs made payable to 'Bruce Smith Books' to: Bruce Smith Books, FREEPOST 242, PO Box 262, St. Albans, Herts, AL3 3BR. Please quote Access/Via number & expiry date to (0727) 412443 (24 hrs). All books dispatched same day where possible. Postage free in UK. Add £5 for overseas airmail orders.

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Latest issue (24) with: Working demos of Digis application software. Kickstart 2 feature (as never written before). Shaun 'Super Cars' Southern interview & so much more!

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the faulty machine to be picked up from my home within a matter of days. Next, I was expecting a long wait before being reunited with my machine, but the nice woman at the HPC promised me that my beloved Amiga would be with me again in under two weeks.

In the meantime, I've been forced

to go back to my trusty old Amiga A1000, a machine which I have owned for over five years now. Everyone seems to slag it off, but one thing is for sure - it's the most reliable Amiga Commodore ever built!

Jason Holborn

PICK OF THE PD DEMOS

Some said it would never happen, but here it is - the *Express* guide to everything that is good in the world of Amiga demos. Don't forget, all these demos (and more) are available from *Seventeen 88* (0824366382) software for just 89p per disk.

GOLORE MUSIC (16204/16206) - Yet another two disk music set with some very impressive tunes to pump through your



• Find out what Amy does with that computer in the *Amiga's Walker Demo*.

stereo. In particular, 'Middle East Mix' is rather fun, featuring samples from some reports of the recent War in the Gulf. Near Saddam get wicked!

ARMY VS WALKER (1622) - Amy the Soldier returns in this latest 3D animation inspired by the famous 'Walker Demo'. I won't say too much about it, suffice to say that if you're after a giggle, then it's worth checking out.

GLOBAL TRASH (16226) - The Kefauers return with one of their greatest demos yet, featuring some of the most spectacular graphic effects yet seen on the Amiga including 800 Phasers, ray traced 3D objects and some very fast and complex vector objects. All this backed up by a great tune.

THE WALL (1627) - Definitely one of the best demos yet produced for the Amiga. This six disk demo (yes, six disks!) is based around Pink Floyd's *The Wall*. The entire demo is entirely self-aware, with each new scene demonstrating the lusty and bizarre of modern warfare.

S

- What do those new plans at Atari really imply?
- Shareware becomes big business - is it a shame?
- Spectre GCR Mac-emulator upgrade races in

STE PRICE CUT

You'll have already read about the price cut on the 520 STE, and the new marketing position of Atari, but now will this affect all you lot, who've already bought an ST, thank you very much. Well for a start, if Atari gets its marketing plans right, then loads of people will rush out and purchase the only 16 bit machine worth having. This will mean in turn, that the perception of the ST, both as a commercial and a public level will change.

No doubt you'll have heard disparaging comments thrown about by some other computer owners which has led to mutterings that a certain software house is going to stop supporting the ST. The ST's user base is already badly a victim for the corporation and soon the software house will collapse, or to this and you'll start seeing more games and business programs appearing. It's a simple equation, but it's easily overlooked: the more people that buy the ST, the better it is for existing owners.

Atari has designed an excellent upgrade path: the 520 STE Discoveries. This pack is an good start point. If, if you want more power, you can upgrade

the memory or the speed on to a 1040 STE. The Mega STE is the next powerful step up the ladder. With this machine you get a computer that can switch between 8 and 16 Megahertz. This means you can rotate compatibility with all your existing software, yet still enjoy the increased processing power.

With the right marketing the Mega STE could be the next big thing. There are mutterings that Atari might produce a Mega STE education pack along the lines of the Family Curriculum pack, enabling schools to purchase a very fast computer, with an intuitive front end and a wealth of decent software.

There are great plans afoot for the Mega STE. Atari has confirmed the existence of its STT add-on transputer board. The speed and processing power of this hardware is simply mind boggling. With the standard configuration you could run software at up to 40 MIPS (millions of instructions a second), which can't bad when you consider that at present it runs at about half an MIPS. And at a projected price of about £500, Atari is giving home computer users the opportunity to sample real computing power.

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features a database for addresses and a Hayes-compatible communication package. A probable release is expected around June/July.

FALCON UPGRADE?

Rumours abound that Amstrad owners of Falcon will be eligible for an upgrade to Falcon 3.0, the new and very impressive high-resolution home production machine. Amstrad, on the other hand, will be developing a major upgrade which is hoped to be released later in the year.

to allow Falcon 3.0 to run smoothly over a Novell network system allowing access multi-player options. If you've confirmation on this one when I get it. Contact - Microsoft on 071 928 1454.

GEOWORKS ENSEMBLE

GeoWorks is pleased to announce the latest version of their Ensemble Master 1.7. Specifically, the latest version adds PostScript printer drivers and a spelling checker. In addition, GeoWorks is reported to be developing a major upgrade which is hoped to be released later in the year.

Paul Rigby

NEW SERIES! - SPECIALIST SHAREWARE

This week sees the beginning of a series of news/previews items that looks at shareware and PD for specialist usage. This week? Why, it's DTP time!

Ask your local shareware vendor for a copy of Desktop Paint 256 version 1, a VGA paint program. A high resolution (great level) VGA paint program, Desktop Paint runs from DOS. Okay, it's a little clunky compared to GEM or Win3, but this is shareware. The interface and tools work very well. Perfect for the occasional blimp that needs some retouching. Intriguingly this program requires Super VGA as well as a mouse. It also supports Paradise+ and Pro, ATI VGA Wonder, and Headland

Video 7 or 1024 graphics boards. Next is AlphaType v 2.2, a program for estimating DTP and typesetting. It's useful for determining how much graphic products should sell for and great for comparing the price differences between DTP and traditional typesetting. This new version contains bug fixes to V2.2 and can use multiple drives (swap files). It is a menu driven, has a graphic arts calculator, can offer disk or printed estimates, preview, online help and complete documentation. Contact: PD & Shareware Library, Wincobee House, Beacon Road, Crowthorne, E. Sussex, TN16 1UL. Tel: 0852 661294

ARCHIMED-ES

- Spring Computer Shopper show roundup
- Two new A3000 add-on releases from Pres
- EasyWriter word processing package unveiled

SHOW REPORT

It seemed that much of the crowd at the Spring Computer Shopper show held at Alexandra Palace had mistaken it for an All Forecasts affair, and were still in shock after shelling out six quid to get in. Thirteen year olds do not want to attend seminars on application architecture, or study Taiwanese VGA cards. They want Atari. They want turtles. They want Arma. They weren't there.

However, Minerva, Pres, Fourth Dimension and the Serial Port gems, providing almost the only relief from wall-to-wall PCs. Minerva had nothing new, but was doing a brisk trade in old box set killing games. The Fourth Dimension was showing many of the games talked about in these pages (Solomon Cats, Checkers Away Extra, Missions). I just not actually selling them yet, so advertising seems to have got about four months ahead of the real release schedule for these games.

The Serial Port and QD Enterprises shared a stand to plug items like their new sound sampler, a new MIDI-based Graphics Enhancer. These deserve more space than I've got this

week, so I'll leave them for now.

DUAL PODDIES

Pres had taken a sizeable stand, and had two new items to be proud of. The first, for A3000 owners, sounds rather prosaic, a dual poddie box. Normal poddies are attached, one at a time, to the A3000 via the rear connector, and protected by a poddie box. Racking systems and poddie housings from Watford and Wild View allow several poddies to be connected but with a manual switch to select one or another. For example, you could add a scanner and hard disk card to the Wild View housing, scan in a picture and you can't save it because the hard disk poddie has to be switched off. Pres has overcome this by clipping an extra connection to the poddie select circuit inside the A3000. It does the same job as inside a 400-series Arc, and allows you to use two normal poddies at the same time.

The Missing Link was also on show and is being marketed as a heavy link between two Archimedes. It's a hybrid board that plugs into the Econet board

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PORT TALBOT WORKSHOPS, Unit 37, Addison Road, Port Talbot SA12 8WZ. Tel: 0633 865008. Fax: 0633 867170

SAM COUPE computer	£199.99	Citizen 1000 printer	£169.99
+ 1 drive		1600 series TV to computer	£11.99
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SAM COMBIS interface	£29.95	SAM Scan cable for Microvise	£9.99
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typical	£39.99	Interconnects 2 joysticks	£7.99
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(15.2" x drive)		3.5" DS/DD disk box of 10	£5.99
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Parallel printer cable Spectrumb	£7.99		
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For full price list of other products please ring.

All prices include VAT - Postage Printers, Computers £5.00. Postage of other products £1.00

SPECIAL FOR ALL FORMAT SHOW

Citizen Swift 9 colour printer	£196.50
3.5" disks	£3.50 for 10
Colour Dump utility for SAM COUPE	£7.99
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40 disk size	£4.50
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Also at show:

Blue Alpha's SAM sound sample and Voice Box interfaces for the SAM COUPE at special show prices

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Price per VNT & p40

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All ST Ram Kits come with instructions and a 100% TEST guarantee. Allowing in most instances.

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For contents of the ST software packs - see the listing of ST computer ranges on the opposite page or phone us for details.

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TT

The amazing 32MB TT030 is now available in the following configurations:

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Misc

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All of our printers come with a parallel cable to suit Atari ST, Amiga and all standard PC etc. (other cables available at extra cost - ask for details). All printers carry a full 12 months warranty. We only sell genuine UK stock - we do not offer inferior 'grey imports'.

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*** 2 YEAR WARRANTY ***
SPECIAL OFFER! All Citizen Swift 924 and 24X printers come with a FREE colour kit and colour ribbon until the end of May 1991.
SPECIAL OFFER! For a limited period only we are offering a CITIZEN PRINTER STATION PACK with all Citizen printers. The pack comprises of: 12" disk full of printer drivers for the ST/Amiga & PC; 200 sheets of booklet tractor feed paper; 200 booklet tractor feed address labels; 5 tractor feed envelopes all for only £29.99 on top of the price of the printer.

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124D / Swift 24 Black Ribbon	£4.50
Swift 9 / Swift 24 Colour Ribbon	£16.00
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Swift 24X Colour Ribbon	£18.00

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124D / Swift 9 & 24 Semi Auto S/Feeder	£39.99
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Swift 24X Colour Kit	£39.99
Swift 24 Font Cards (5 different) each	£35.00

star

Star LC10 Mono (9-pin)	£155.00
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Star LC24-10 Mono (24-pin)	£215.00
Star LC24-200 Mono (24-pin)	£260.00
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Canon BJ10E Portable Bubble Jet	£289.00
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Panasonic KXP 1124i (24-pin)	£279.00

ACCESSORIES

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Panasonic KXP 1124i Ribbon	£9.00

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ON REQUEST - PLEASE RING US WITH
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Accessories

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Golden Image Scan Scanner	£199.00
Amiga Stereo extn lead	£29.99
Amiga Stereo M2 8833 lead	£29.99
Standard Parallel lead	£5.95
Mouse Mat	£3.50
2 x Mid cables	£19.99

Software

Monitor stand Swivel	£129.95
Deluxe Paint version 3	£64.95
Via Amiga video capturing	£39.99
Active Software Pack	£29.95

8833

Colour Monitor

The Philips 8833 (M2) is the perfect colour monitor for ST and Amiga owners. With its 5" super sized and super quality picture & 16.5" wide view all the full capabilities of the STC and the Amiga. The Philips 8833 (M2) also comes with 12 months on site warranty FREE!

8833 with ST/M cable	£249.99
8833 with STC cable	£249.99
8833 with Amiga cable	£249.99

LYNX

Game Console

The Atari Lynx is a superb full colour hand held game console using plug-in cartridge games. The Lynx can be used with either batteries or a mains power supply unit. All six Lynx machines come with instructions and mains power supply unit.

Lynx Console	£95.00
Lynx Console with in-line Cartridge Games (1 cartridge)	£117.50

Carrying Case	£14.99
Carrying Pouch	£10.99
Car Power Adapter	£35.00
San Vion/Sonyth - Head	£5.99
Mains Power Supply	£14.99

ALL GAMES £19.99 EACH:

Blue Lightning	California Games
Cops Chattering	Electrozone
Galaxy of Zondor	Maxi Pacman
Box	Rampage
Power Boy	Room Search
Read Bakers	Shanghai
Pyrex	Xenophobe
Slim Wave	
Tutor Memory	

ZV FI

Stereo Speakers

ZV FI installed stereo speakers are suitable for the ST/Amiga & SEGA MEGA DRIVE. They come with a power supply and offer 1.6 metre stereo sound for only £37.50 - including VAT + delivery



• EasyWriter, a powerful program with some nice Mac touches.

space inside any Arc. Two TML-equipped Arcs can be linked as a cable and can then communicate at over 10Mbps per second. Files can be swapped from one machine to another by dragging them into a "Send window" or out of a "Receive" box, as the system can act like any other filing system. A later development will allow a network of up to eight Arcs to communicate this way, with one acting as a sort of "telephone exchange".

AS EASY AS...

At first look, Icon Technology's EasyWriter is good. It's a windowed word processor which, unlike its closest competitor First Word Plus, uses outline fonts and RISC OS pointer drivers to the full. It has a very structured approach to writing - you can set up a hierarchy of chapters, sections and sub-sections, incorporate lists and so on, and each can have a just style associated with it. It definitely feels like a word processor rather than a DTP package, despite the fact that

you can incorporate drawings and spirals into your documents. Rather clearly, these can even flow with the text, so you can use it along with Computer Concepts' Easor as a technical authoring package.

Table creation is a dream - it's definitely the star turn. You tell EasyWriter to begin a table and just type. You can insert or delete rows, add borders and guidelines, and create those that span two or more columns.

The big yet rather unexcitable beta-release of EasyWriter brings some of Icon's strengths in the Mac world and relative inexperience of Acorn software. A couple of VMS features are missing, in particular the ability to use the Copy key to delete forwards or to change case. But Mac touches, like any typing replacing what's selected, are most. Sadly EasyWriter doesn't inherit the Mac's Tab key to move between fields in a dialogue. Later in the year, Icon will release TechWriter, a big brother with equation-editing facilities built in. There's already a "junior version" by adding a simple text editor you can limit the menu items that appear, simplifying EasyWriter down to bare essentials.

Icon see this becoming the word processor of choice in the home and schools. The fact that it needs 2Mb to run could be just the excuse people need to upgrade. But business will remain sceptical of it until a mainframe utility is released. Icon Technology: 0533 546225. Price: £276 720/95.

Ken Coomars



- Goldmark upgrades Nirvana for the Plus
- Pang on arcade machine cartridge!
- All Formats computer Fair latest

NIRVANA FOR THE PLUS

One of the unfortunate things about the new Amstrad Plus machines is that not all of the existing software out there will run on it. One of the main casualties was Goldmark Systems' Nirvana disk management software. Well now Goldmark is producing a new version which will work on both old and new machines. The only thing for Plus owners to watch out for is that some of the features will not work - the tape archiver, for example. This is because the 6428 Plus has no tape facilities.

There's a copy wiping its way to my desk even as we speak, so watch out for it - and for some other Goldmark goodies, come to that.

PANG

AMUSEMENT Imagine being attacked by waves after wave of vicious killer balloons, giant balloons, monsters, gaseous bags of... um... air... Well, is it, it's terrifying. OK it must be, or Michael Cox, wouldn't have used the plot for his ludicrously popular Pang arcade machine. Come to that, Ocean must have thought it a pretty neat idea

too, or it wouldn't have done a conversion for Amstrad cartridge machines.

These giant, inflated balloons are just so much hot air, mind. Give them a good poke with your harpoon gun and they just fall apart. Trouble is, they fall apart into two slightly smaller balloons, and these are just as fatal if they touch you. OK, then, give them another belt with the old harpoon-lobber... yikes! Even more, and even smaller, balloons! It's only the smallest balloons which actually disappear entirely when you hit them, so things are a bit tougher than they might be.

You start off with six lives, a time limit and a couple of big boucky balloons to dispose of. The game is part reflex, part strategy. The reflex comes in when you try to dodge the wallowing gasbags. The strategy involves dealing with just one balloon at a time, so that you have the minimum number possible on-screen at once.

The action takes place against a variety of scenic backgrounds around the world. There are 17 different locations, each with 3 screens, so there's plenty to keep you going - especially



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• You'll be a ghost until Don's walk into it, or you'll lose the power to shoot.



• You've got to be able to shoot up these bad-dude pretty quickly to avoid the balloons.

since every screen features a different 'puzzle'. Things start off easy enough, but later on these are ladders to climb, blocks to destroy and hazards to avoid.

There are also little creatures that wander on to the screen at times to either help or hinder you. A creature that looks like a giant whale is a pain in the neck, because although it doesn't hurt you, walking into it takes away your ability to fire for several seconds. Crabs are much more useful - they use their claws to pop balloons for you.

You can also pick up mini-weapons now and again, but some are more desirable than others. Avoid the dynamite in particular, since it immediately blows all the big balloons into their component little ones. Nasty.

Best of all is the simultaneous two-player mode. You get twice the firepower, after all. Only one problem - you get less than half the strategy. It's not necessarily that much easier.

Did I say the two-player mode was

the best thing of all? Wrong. The best thing about *Pong* is the sheer quality of its graphics and sound. Ocean's programmers have done it again, with a cart game that defies its final opponent. It's not quite *ST* standard, but it's never 16-bit than *Star*, that's for sure.

Pang sells for the usual disk/cart price tag of £25, but it's excellent. Gameplay is simple but superbly addictive, while presentation is excellent. If you've got a G4000 or a Plus, buy it.

ALL FORMATS HOTLINE

Personally, I think all 16-bit numbers are a lot of a twizz, and they occasionally have their uses - I only say that you can keep up with the latest series for the All Formats Computer Fair. Don't expect all the glitz and glamour of the top national shows at these events, but do expect to pick up loads of bargains. To find out the latest, call 0895 299 865.

Rob Lawton

C64

- The piracy argument spills over from Express Mail
- System 3's brilliant new cartridge games compilation
- Crystal Gazing: Looking ahead to future games

PIRACY PREDICAMENT

Over the past few days I have been contemplating the subject of piracy, and no doubt the mention of the 'P' word has brought moans and groans of despair from many among you, but the subject is not as twisted or convoluted as it may appear. Ask a pirate (sorry, thief) why he/she steals and the majority of excuses will be 'The software houses charge too much - many games are not worth the high price'. So, ask a software house why its prices are so high and the majority of answers will be 'the software pirates force the prices up by their actions'. Are you thinking what I'm thinking? I'm greedy people keep their prices high and pre-release demos and new games that miss prices may well fail. A very simple answer to a very serious problem... maybe.

It would be interesting to see whether the cartridge renaissance has done anything to curb piracy on the C64 although I have recently heard rumours of a 'tracked' version of *Navy Seal* on disk. This then suggests another

couple of reasons for piracy, people do it either to prove themselves as competent hackers or as a personal challenge. Is there actually an answer to the problem, or is it just a fact of life? Your views on the subject are very welcome.

ALL THE BEST

System 3, one of the finest cartridge advocates, have recently released what I consider to be one of the best compilations around. The *Premier Collection* contains six of System 3's best games, for the meagre sum of £15.99 (casualists) or £19.95 (dads) - that works out very cheaply indeed. I've recently reviewed the *Last Ninja Express* 1301, so I'll briefly cover the remaining five: *The Last Ninja II* is, not surprisingly, the sequel to the *Last Ninja*, and the gameplay is identical to its predecessor. The game is set in modern-day New York, and the levels span Central Park, the streets, the sewers, the skyscrapers, and eventually the bad-guy's headquarters. Graphics are superb, as is the *Mut*



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Gray music, and the puzzles are nicely structured (and often quite clever). The range of weapons is reminiscent of the original, but combat has a unique twist - when an enemy has been defeated you have a limited time before he regains his strength and attacks again. A highly playable game, but remember there is VERY LITTLE difference between this and the Ninja Remix.

International Karate was probably the company's first major success, way back in 1986. It walked off with Exploding Fox in terms of graphic quality, animation, and the superlative Rob Hubbard soundtrack. It follows the usual two player format, with the usual range of moves (as well as several humorous touches). Sadly, it does tend to show its age alongside newer releases (and to mention the excellent *K-1*). However it is extremely enjoyable to play, and the innovative bonus section is just the icing on the cake (about a tad dated).

Conquest is a multi-level, multi-plot shoot 'em up, and boasts a vast collection of extra weapons and ship enhancements. The graphics have been replaced by Disk and High Riley, and while they are both excellent artists in their own right, their graphics simply don't gel. So what you end up with are some surreal backdrops (with organic plant life and huge trees) combined with shiny spaceships and aliens. Still, it offers the player some basic vertical and horizontal stages, as well as some great music. I would not recommend it usually, but the price readers it



• Last Ninja II - a highly playable game.

unmistakable.

Myth is undoubtedly the best of the bunch, and the attention and care lavished on it simply oozes out. The game is set across several time zones, each based on various myths or legends. Levels include Hades, the Vikings, the Pyramids, plus an utterly superb eternal level. While the game has a few faults and bugs, the astounding Rob Stevenson graphics captivate and enthrall. The only problem with Myth is that it's so headily difficult Dan has to try so hard to reach the next section, it only to see the display at graphics & great game, but not for the short/tempered.

Remo's Quest is a jolly platform romp following the top-standard Giffindell is captured by evil forces and you have to kill him and rescue her' format. Timmo is a cute little fellow, who invents a number of antiscapes, picking up vital objects and money to aid in the main-level shoot. Of course, there is the usual selection of nasty enemies to hinder your progress - most of them are extremely cute indeed! The real joy about Remo's is the scrolling;

superb two-layer parallax, with loads of colour splashed around. The game is vaguely similar to Hawkeye, in that the walkabout/back up element becomes slightly restrictive as the game progresses. Having said that, it's a jolly game at a laughable price.

To complement the Ninter's review in Express 131, here is a splendid little song for single boys. It works fine on the original Datamax version, but I'm not sure about the Ace re-release - if it doesn't work, sorry. The game also loads slightly differently, so don't be alarmed!

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REAR: POKE, B+C+H+H+H+H
I:PCW:84709912:8444:9101:8470:8444
REAR: 8470:8444
DATA2, 84, 247, 169, 21, 141, 177, 3
6
DATA19, 55, 241, 378, 3, 169, 105, 1
417
DATA179, 3, 22, 228, 245, 169, 67, 14
16
DATA19, 192, 169, 2, 141, 44, 192, 32
9
DATA191, 3, 96, 149, 244, 141, 154, 3
510
DATA169, 0, 141, 242, 193, 76, 226, 1
93

And here are some Action Replay codes for the Last Ninja II and Myth (inspired above). There is a code for each level, and they reward you with infinite lives in both cases.

LAST NINJA II LEVEL 1 - POKE
37456, 233, 149562 - POKE
34698, 233, 149562 - POKE
31852, 233, 149562 - POKE
35481, 233, 149562 - POKE
35771, 233, 149562 - POKE
34679, 233, 149562 - POKE
34444, 173, 149562 - POKE
24420, 144, 149562 - POKE
24692, 144, 149562 - POKE
14952, 144, 149562 - POKE
23672, 165

ON THE HORIZON

It's official - the software slump is now upon us, indeed sister magazine Commodore Format has received only a handful of games for review over the past few weeks. Perhaps the only games to be found until July will be compilations and budget re-releases.

There is so much to shed a lonely tear - it happens every year. The only consolation is the thought of all those great games in the future. Here are a few titles which should be worth the wait. The Hiss II (Thalassus) another great compilation featuring Snake, Retrograde, Crocodiles, and Summer Car. Night Breed II (Korax) Not sure about the title, but the game based on a Clive Barker novel should resemble its 99-50 predecessor quite closely. Take 100000 a conversion of the 200 rating arcade machine, should do something to look out for. Crocodiles II (Thalassus) I've seen a recent demo, and the game looks 'well cool'. Needless to say, reviews of these titles are imminent.

Andy Roberts

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SPECTRUM

- D.I.C.E. disk doctor utility improved - for the SAM too!
- CodeMaster's Slightly Magic: Destined to go to the top?
- Two totally red hot pokes for Total Recall and Bumpy

DICE IMPROVED

For a few years now Plus 3 owners have spoken in reverential, hushed tones about DICE - a disk doctor utility for their machines from Koberstein. The Disk Information Copier Editor, to give its full name, is a powerful utility packed with impressive features, and in true washing powder style is now new, improved and better than ever with the release of version 3.0. Not only that but there's also a SAM version to boot which is a definite boon to Code owners' lives, make no mistake.

DICE offers a multitude of functions: that let you manipulate your Plus 3's disk drive for all your own worth. With it you can access any part of the disk, make backups; read, examine and change any sector; get a full directory listing; recover erased files; read file headers; and see a graphical display of how much space is left on the disk and where the files are located, to name the most extensive features.

This latest version also provides high capacity formats, which means 1.78K, 1.57K and 202K sized disks are now possible, and an option for

extended directories.

DICE Version 3.0 in its Plus 3 incarnation costs £14.95 or disk with a chunky manual. The SAM version seems pretty similar but that's as bad thing and comes complete with a similarly thick and well-written manual for only £12.95 on 3.5-inch disk. Koberstein tell me it's compatible with III Copiers, whatever ROM they might have, although they're not sure how extensively it will co-exist with the new MasterDOS III the moment.

You can find the pretty clever people at Koberstein Software by writing to "Theatrical Dept", Hulme Lane, Hulme, Longtish, Stoke-on-Trent, ST3 5BH.

MAGIC MOMENTS

Last week I printed Mark Harris's poke for Slightly Magic and thought "what's that then?" thereby showing how extremely alert and polite I can be. In a desperate attempt to "get with it" I tried it out on my long-coloured shirt and alight and went out to purchase it. Now I know the said thing is a CodeMaster's cheapie and a very good one at that. It's another one of those arcade adventures

they're so good at churning out although this time without any sight of their lovable star character, Clazy. Instead you control Slightly, a well-endowed wizard who needs to rescue a princess from a dragon. But don't let that last sentence put you off because Slightly Magic is very well done indeed with loads of colourful and cleverly arranged screens to get through.

There's the usual assortment of nasties, all well-drawn and animated, who luckily can be seen off with various spells that you can collect. Mainly it's a case of picking up objects and spells and using them. It's in the time-honoured arcade adventure style.

Definitely a cut above the average budget offering, this is a welcome and original departure from tired re-releases and rip-off-ed arcade clones that make up the cheapo market. Hurrah for CodeMaster!

Anything you want to say to me? If you've got any comments, criticisms or suggestions regarding the column I'll welcome them with open arms and cheers aplenty. Also wanted are any tips, pokes, wrinkles or cheats for the Spectrum, either for games or general usage. Send everything to me, but's Robin Aday at The Spectrum Column, New Computer Express, 30 Monmouth Street, Bath BA1 2AP. Much appreciated.

PRIME POKES

I've got two finest quality prime pokes for you this week thanks to our old brother and homeboy, Mark Harris. The



Follow the routine of the prime pokes and you will get ahead in Total Recall.

first routine is for Total Recall and it hasn't been done by anyone else anywhere. In case you're not clear on all this hacking business, the face saving, score enhancing benefits of pokes can be yours if you do the following:

- 1) Type in the listing
- 2) Save it if you require its help again
- 3) RUN the program
- 4) Start your game tale from the beginning. That's it.

26 ROM TOTAL RECALL 20 POB
P=61412 TO P25: READ A: 17
A=859 THEN POKE B,1: NEXT B 30
PRINT "STANT "TOTAL RECALL"
TIMEY/USE 61412 40 DATA
221,33,14,175,17,8,16,62,289,9
5 50 DATA
235,86,5,48,241,62,344,50,0,19
5 60 DATA
175,50,2,191,195,189,175,62,17
6 60 70 DATA
52,590,33,18,240,17,223,276,1,

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NO HD DATA
0,237,176,195,13,193,42,266
90 DATA 50,192,133 + RUN
AHEAD 100 DATA 50,4,99 + RUN
TIME 110 DATA
50,259,101,50,156,130,56,195
+ 146,56,92,170 + RUN
120 DATA 195,223,159,999 +
RUN END

This second listing is for Bunsy, an excellent Top Sinclair cover game of a while back. Follow the instructions above to get a working and leave out any jokes you don't want. Mark assures me the hacker should work as Multiface games as well. What a bargain! Infinite thanks for all eternity go once again to Mark. And he'd like to say hello back to fellow hacking personage Steven Kemp.

11 POKR 47771.0 + RUN LEVER
12 POKR 47388.0 + RUN
ROMBERG 13 POKR 51576.0 +
POKR 52155.4 + RUN KATR 14
POKR 51757.0 + POKR 52295.0
+ POKR 52867.0 + RUN KATR
15 POKR 52867.0 + RUN RM of
everything 16 POKR 47976.4 +
RUN START LEVEL PLAYER 1
(1040-91) 17 POKR 47992.4 +
RUN START LEVEL PLAYER 2
(1040-91) 18 RUN start level
poke needs RM of everything
to work 30 KEMER ** + RUN

Robin Atway

MACINTOSH

- The first funny bugs in System 7 begin to surface
- How to improve your Finder's functionality
- Font conversion the easy way - thank the lord!

RUMOURS...

Want to see a bug in System 7? Try this: your comments into the Get Info window (which is accessible from the File menu) and click on the check box to

lock the file. Close the Get Info window and then open it again. Hey presto! - your comments were not recorded by the Finder. To make sure comments are kept, you have to type them in, close the

window, open it again and then lock the file. Not a spectacular bug, but enough to keep Apple's software developers on their toes.

Incidentally, if you're still unable to get your hands on System 7, it's worth taking eight disks into your local Apple dealer and asking if they'll just copy the new System for you. Apparently it will be another month or so before all the documentation is available in quantity - and the full package, of course, will cost you £50. But if you can make do without the manuals, many dealers will copy the software for you free of charge. Of course, you'll find they're now likely to do it if you actually bought your Mac

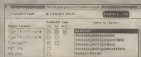
METAMORPHOSIS PRO

The main complaint from people who use Adobe Type Manager (ATM) is that it can't cope with Type 3 fonts - which means that many older fonts appear jagged on the screen and don't print out well on QuickDraw printers like the StyleWriter. Well, help is at hand from a neat program called Metamorphosis Professional.

Metamorphosis Pro is a font manipulation program which allows you to, among other things, create editable outlines of any font (so you can easily create logos and so on) and convert fonts between Mac Types 1 and 3, as well as TrueType, PC PostScript and NeXT (as if anyone actually owned a NeXT). So, while this might seem more like a professional font designer's tool, many will see its great advantage as allowing users to convert all their old fonts so that they will run under ATM.

The program is easy to use - converting fonts is especially easy, with only a few keystrokes required. Although the program costs £110, this is fairly reason-

able when you consider that one new font could well cost you the same amount. And if you have a QuickDraw printer and System 7, you could convert all your PostScript fonts to TrueType so that you don't need to use ATM at all. Metamorphosis Pro is highly recommended. Contact Softline on 081 642 4242.



Metamorphosis Professional: Making converting between font formats child's play.



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HART MICRO

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from that dealership.

One thing that has caused some people is that removable hard disks cannot be used as virtual memory storage areas under System 7. But then, as one Mac developer said, "Renewing a hard disk while the Macintosh was using it for virtual memory would be rather like replacing out 3000s while the Mac was still turned on".

Apple Computer in the States is facing a lawsuit which claims that the company made false financial statements to the public in 1991, prior to its May financial report on the third financial quarter, which said that corporate earnings were under pressure. An Apple spokesman has said that the claims are "completely without merit", and that the company will oppose them all. Following the financial statement, Apple shares dropped somewhat; the plaintiffs are hoping to bring suit on behalf of all purchasers of Apple common stock between January 17 and April 30 this year. Some of the officers and directors of Apple have also been named in the case.

Apple has ordered a new Cray supercomputer, said to be worth over \$4.6 million, it will replace the Cray that Apple bought in 1989, and will be used for research and development into subjects such as the flow of air and dust particles in computer cases.

Rumour has it that an Apple executive met a Cray exec just after the purchase of the first supercomputer in 1989, and told her proudly that Apple was going to use the Cray to help

develop new Macs. "So what," replied the Cray executive: "We use Macs to help develop new Crays".

ALIASES AND IMPOSTERS

There is one thing which is incredibly annoying when using the Macintosh. If you double-click on a document which has been created with an application not on your hard disk, you are told with a dialog which tells you that "the application is busy or missing." Fortunately, I'm not the only one to find this a pain in the neck, and some programmers have

done something about it. Two utilities are about which cure the problem - the Shareware Application Replacer, and Imposter, which is free.

Both require setting up - Application Replacer is easy, while Imposter requires you to use MacDraw, which is not for the faint-hearted. Once you've done this, double-clicking, say, a MacDraw document will open the word processor of your choice and will read the file as if assuming that it is in the format. Both utilities are available on CD, in the "MacFiles" set; my choice is

for imposters, but remember that you will also need MacDraw to use the one. Those who fancy having aliases of applications (i.e. or 2K files which, when double-clicked, open the real application) don't have to upgrade to System 7. Again on CD is an application called Alias which creates, yes, aliases. It's easy to use, and means that you can have at least a tiny bit of System 7's functionality without going through the hassle of upgrading.

Ian Wrigley

POSTCARD FROM AMERICA



The Iliad is the junior partner in the high-end compact Mac line. It offers 68030 power at an "affordable" price. But owners have noticed that there are times when the Iliad slows down. One is when it's performing tasks that could use a math co-processor, which is optional. The other slowdown comes when displaying 256 (8-bit) colours on the screen.

Several compact Macintosh models use a portion of RAM memory for video display. This is a good feature, since it doesn't force users to install costly video boards. Unfortunately, the more color you want, the slower things get. A 5MHz Iliad runs two times faster when displaying only black and white, over 256 colours. Things get a bit better when running only 16 colours, but still slower. What's going on?

There are two banks of memory on the Iliad motherboard. Bank A is always used for the video RAM. The second bank is filled with whatever flavors of single-line memory modules (SIMM) users can afford. The necessary bottleneck occurs in Bank A.

As the Mac boots up, the video and other parts of the operating system are loaded into the memory bank. This doesn't fill up all of the megabyte of RAM in the bank, and there's still plenty of room for most applications. All of the action makes the bank so busy that access slows - just like making a deposit on pay day.

The solution is simple - force the Macintosh to move the applications out of Bank A and into Higher Bank B memory, where it's not involved with the video. Apple provides users with the tool to accomplish this business - the RAM cache setting in the General Control (or the Memory Control Panel in System 7).

If the RAM cache is adjusted to 700K or greater, there's no room in Bank A for applications. It's all video and cache, which makes the Iliad run almost as fast in 8-bit colour as in black and white.

This trick also works for owners of Macintosh Iliad running on-board video. That's a real coiffers check. David Morgenthaun

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WHOLE WIRED WORLD

Steve Gold continues his search for hot computer news from around the globe. This week he's checking into the White House for the latest on piracy, monitoring Apple's next moves, getting networked up and trying out German peripherals.



GERMANS BOOST PORTFOLIO

Despite what the adverts say, the Atari Portfolio being sold at £199 comes with just 128K of RAM. While this can be expanded to 640K using expansion cartridges, it is an expensive way of boosting memory to that of a basic desktop machine. Which is why Becker & Partners in western Germany has come up with a low-cost expansion system for the pocket machine.

Becker & Partners' solution is to latch on what it calls a Trans Drive to the Portfolio. The interface unit connects the Portfolio interactively to any PC compatible, allowing it to access RAM and disk drives attached to the PC on a purely transparent basis.

Pricing on the Trans Drive is quite reasonable at DM 198 which works out to be around £80.00 at current exchange rates. The company also supplies budget RAM modules for the Portfolio. If you really have to expand memory while on the move.

Contact: Becker & Partners Mobile
Datensysteme, Postfach 100,
Wilhelmstrasse 31, Birkofstrasse 51,
5100 Aachen, West Germany
Tel: 01049-241-506913
Fax: 01049-241-506577

APPLE TO LAY OFF 1,500 STAFF

Despite the fact that the trio of Mac Classic computers - unveiled last October - are doing well, the recession appears to have hit even the mighty Apple. The computer giant is reported to be cutting nearly 800 of its 1,500 jobs.

The good news - for users of the Mac at least - is that the bulk of the job cuts will be in administrative support.

The US Government is to help stamp out rampant piracy in the Far East, and other parts of the world.

The common need for the protection of intellectual property is brought

* *Willy News* won't accept historic penny.

company giants from the computer, pharmaceutical and movie businesses to the White House recently where they testified before a US congressional committee. All appealed for an endorsement of negotiations for a free-trade agreement with Mexico and a new round of lowering international trade barriers.

The meeting ended with the US government agreeing to seek stronger commitments from all its trading partners over intellectual property rights.

Put simply, this means that, if non-US companies are looking to do business with the US, then their governments must

look very seriously at passing appropriate legislation to protect valuable intellectual copyrights.

For the computer industry, this means that the flow of pirate software from the Far East and other countries that do not recognize international copyrights will cease or at least be considerably slowed down.

U.S. and European business software publishers say they are losing millions of dollars every year, because certain countries are not taking software piracy seriously. But financial based pressure from the White House is sure to prompt rapid changes.

ments and shouldn't directly affect sales and market of the Mac.

Layoffs are not particularly new for Apple. There will be the fourth in the company's 15-year history. In 1987 Apple shved 40 people from the payroll, while in 1985 1,200 jobs were lost and a further 400 staff were axed last year.

HAYES STEPS INTO LANSTEP

Hayes has confirmed that the Lanstep Network Operating System (NOS) is now shipping to resellers in the U.S.

Plans call for the technology to be unveiled in the UK on May 18. According to Dennis Hayes, the company's president, the UK rollout marks the first stage in a series of European launches for the technology.

"We first unveiled Landstop at Boston Network in the US and the response has been excellent. Retailers appreciate the unique opportunity that the technology offers," he said. "What Hayes has done is to combine the benefits of low end net-

works - cheap pricing, ease of installation and OGC compatibility - with the features of high-end systems," he adds.

Hayes went on to explain that Lanstep's pricing is in line with current low-end systems, yet has all the advantages of a high-end system without the negative aspects of high-end systems. High pricing and intensive use of valuable system resources.

Hayes has gone for a modular approach with Lanstep. The basic start kit for up to five users costs \$595.00. A developer kit is available for the same price. Upgrade packs, which add another five users to the network, cost \$395.00 while a real gateway upgrade costs exactly the same.

Ten years in the making, the system started to come together about three years ago at what was then Watco's Micro Systems in Waterloo, Canada.

"When we acquired Waterloo in 1990 we realised the potential of the technology which the company was

already marketing. Landstep is a completely new technology system," he said, adding that it represents the third generation of networking systems.

One key feature of Larasp is the fact that data is written straight to disk rather than held in a caching system. This means that an uninterruptible power supply is not required, thus cutting the costs of installing a network still further.

■ This is good news for the low end of the networking market - it's bound to force pricing of existing low-end systems such as Sage and the like down still further as the competition bites.

EXPANDING NOTEBOOK DRIVES

Watch out for larger hard drives on notebook PCs soon. Seagate Technology has expanded its range of 2.5-inch form factor hard disk drives by adding two units specifically designed for notebooks.

The new ST9077A drive, when formatted, can hold up to 16Mb of data and comes with an embedded AT interface. Seagate says that since the parts of the drive the mechanism, the actuator and spindle motor, are attached to the cover and base of the drive itself, they can withstand greater force than other designs; the company claims the drive can withstand forces up to 150Gs.

The new drive tops the scales at just 4.5 ounces. Access time is rated at under 20 milliseconds. Seagate expects the drive to be available in the third quarter of this year.

The second addition to the Seagate stable, meanwhile, is the ST5036A, 33MB version with broadly the same specifications apart from larger data capacity. It will be ready by autumn. ■



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to a general use of computers, computers reported their children to have less difficulty getting off school-related tasks than their parents reported for themselves.

microprocessor? According to Apple's spokeswoman, the firm expects a microprocessor to be available before the end of the year.

Also, throughout the paper we have used the word "model" to refer to the model of the system, not the model of the user. This is a common source of confusion, and we have tried to make it clear that the model of the user is the user's mental model, not the model of the system.

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TECH TIPS

Holding on to some terrific tips that other readers could use? Can't persuade your printer to perform? Getting in a muddle over your modem? Worry no longer. Write to Keith Pomfret, Tech Tips, New Computer Express, 30 Monmouth Street, Bath BA1 2BW

Canon fodder

I recently purchased a Canon B-156 printer which I am using with Atari STE and Cambridge 286 computers.

When printing out from Pipedream on the 286 the top line of print is out of alignment with the rest of the printed text, despite being lined up correctly on the 286 screen.

I got round this by inserting a "black line" at line one before printing, but I wonder if there is an adjustment I can make to the printer driver instead. Can you help please?

Do you know of a suitable printer driver for Easy Draw? This is the only Atari program I am unable to use with the Canon bubble jet.

Peter Dickie, Edinburgh

The best place to get printer drivers and "fixes" for printer drivers is a good established PD library where the librarian knows the machine and has a web of contacts throughout the machine specific world. Most of the utility and application problems that people have will have been encountered before and

the PD libraries tend to operate a loose forum in which problems are batted around and programs and solutions are usually found.

For the Atari ST you could do a bit worse than to contact Goodtime PD in the postbox. Mike Goodman runs a PD and Shareware library and regularly publishes a catalogue of his wares that includes news and reviews of the ST PD world. The Goodman PD library can be contacted at 16 Dorset Close, Mar Hay Estate, Longton Stoke-on-Trent. If you've a query you could give their enquiry line a ring on 0752 339550.

Dumb modem

You are my last hope in sorting out a problem I have with a modem that I received free gratis, but without manuals or other info.

Anyway, I have connected it to my Amiga 506 with a RS232 cable (I think) the pin layout below (I wish I had used

Male	Female
2	2
3	3
5	5
6	6
7	7

8	8
25	20
22	22

These have come from the Amiga manual, but I am not sure if they are right. I am using NComm 1.6 (installed) but when I dial, the machine comes up with "Modem not responding".

Could you please tell me what I am doing wrong as it is a shame to scrap a good modem.

Andy Reeves, Rotherham

There's nothing wrong with NComm so we must assume that it's either your cable, Amiga or modem. Test the cable for continuity using a multimeter.

Assuming that it tests out OK try it on another Amiga/modem combination that is known to work. If that's OK and it's not the cable, check the Amiga by trying a modem/cable combination that's known to work.

If the Amiga checks out as OK, the problem is with the modem. As I'm not sure which modem you're using, I can't give you any specific advice as to procedure in making it work but here's a bit of general advice. If it's an automatic modem try typing AT and hitting the Return key.

This should bring the response "OK"

if your modem is Hayes compatible. Hayes compatibility is the industry standard for automatic modems. If this doesn't work and there are various switches and controls on the modem, try the various possible combinations of the switches while attempting to connect with an on-line service.

The sort of controls that you can expect to find on a manual modem are power/enable, baud rate and on-line. To dial up a session you should pick an appropriate baud rate for that service, select operate and manually dial the number. When it answers and you hear the modem "squelch" on the phone, select the on-line control and then replace the phone. If all is well, you should get the log on screen from the remote service. If you get garbage on the screen, check that your baud rate and protocols are set correctly. A good place to start is generally 1200/1200 baud rate and ERT1 for a protocol, see in the software.

Hard driver

I have a problem getting my printer to work with my AS/40. The printer is an Olivetti JP921 - what driver does it need? Olivetti cannot (won't) help me. I didn't come with a manual so I cannot even use a PD Driver Creator because I do not know the escape codes.

Andy Reeves, Rotherham

According to Olivetti, the printer that you have supports the Epson standard so if you try installing the various Epson drivers in preferences (instructions on how to do this in the manual).

Try each of the Epson drivers (and any others that you fancy) until you get the one that gives the best result with your printer.

Free Gift

Following your notice in issue 128 I enclose a small program that I have written and wish to place in the Public Domain. I enclose listings where appropriate and have included some comments on the program below. If you run the program you will note that I have

GEM problem

I recently purchased a Trigon Model 88/6 from UK Home Computers and up to now have been very pleased with it. Shortly after buying it I bought an old copy of Finestre GTP (VME) the AMS version, with this came GEM3. I had no problem in setting up, but lately I have come across a major problem, this is that the screen goes completely blank after only a short time in use (between 30 seconds and five minutes). This happens in the desktop and in Finestre and Peter's Gem Excel. The blanking is only reversible by a complete power shut off the system unit.

It also happens on a couple of PD games that I recently acquired. I have installed Gem more than once to make sure that the set-up is correct and is in Hercules graphics mode. Sometimes the screen does not clear at all and the remnants of the mouse pointer and menus are left on the screen until the system crashes completely.

Please help as I am a poor and broke A level student trying to do an A level in computer science.

Robin Clayton, Carlisle



• You'll need to run a shareware utility before the Trigon PC will handle graphics applications like Finestre.

We spoke to Ron Gladwin at UK Home computers and he confirmed our suspicions. The computer that you bought wasn't intended as a graphics machine (as you need for UTP programs like Finestre). The display standard for the monitor and display is VGA. However, all is not lost. UK Home Computers have access to a shareware program that should allow you to set up your machine to run a more emulative of the VGA graphics mode. Give them a ring on 0793 995654.

described the game as charityware. This means that whilst there is no obligation on anybody to do anything (as in true Public Domain), I have used the opportunity to advertise a very worthwhile local charity. If anyone feels that the game merits it I request a donation to my local RSPCA Animal Shelter.

The game is written in 15002 Assembly language using an assembler typed in from your 64 magazine in 1985. As the assembler can handle a maximum source code size of 25 K, which results in an object code of around 4 K, the program is in the form of several small modules.

Richard Jones, Shetland.

I've resisted the urge to print the entire letter as we wouldn't have enough pages in the magazine. However, we gratefully accept it for the Tech Tips group hole and look forward to seeing it and running. Your charity donation idea is a fine and selfless gesture which I'm sure could benefit from a dose of organisation. May I suggest that you offer the program to a shareware library (The Express user groups section should help you to find one) with instructions that the shareware 'law' should go to your choice of charity.

TIP! Laser patch

Unfortunately my tip regarding patching the Amiga Preferences WP LaserJet driver was printed wrong in your magazine - one of the bytes was left out! Here are the bytes to look for and the changes to make as well as a detailed description of how to do so.

Original ES 80 06 01
Patched 87 80 06 01

To do this using the Public Domain file editor HexZap load the driver by typing in full path name in the Filespec string gadget, eg. c:\hd\newspapers\hp_laserjet. In common with most other file editors HexZap displays two distinct window sections. The larger display depicts byte values in Hex while the smaller one displays corresponding ASCII characters; you can edit either by clicking the mouse within one of the sections and moving about with the cursor keys.

To get to sector 10 offset 15E, click on the upward pointing F arrow in the GOTO register and keep doing so until the Current Sector reads 10. Now click the left mouse button while the pointer is over the Hex editing window. Edit Mode should now read Hex. It only remains to locate offset 15E. This is located 11 lines down from the top, move the cursor there and

Using TV tuners, videos, NICAM boxes and other TV related equipment with computers can be confusing when the TV detector van calls. Here's one letter to try and clear the muddy waters...

TIP! Keeping in tune

What is a TV receiver? For what it's worth, here is my opinion. My only qualification is some 40 years of radio as a hobby and licensed for about 25 years.

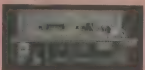
I would class any equipment as a TV for those purposes as any equipment that is capable of receiving a TV signal and making use of the video content of that signal to provide a visible picture either at time of transmission or to store the video content for future use. I would class a single digitised frame of a TV picture as making use of the video content.

A colour licence I would consider needed if the equipment is capable of processing the video signal to provide RGB components and display these as a colour picture or store them for reproduction at a later date as a colour picture. Again I consider a digitised frame is

displayed or stored as RGB is charged as a colour receiver. A tuner providing composite video and RGB if only connected to a black and white monitor or storing only a single 5 & 6 digitised frame could be possibly classed as a BW receiver. However if a colour monitor is also available it could be difficult to prove.

Mr Perry, Kidderminster.

I'm not sure that you're correct, but you're heading in the right direction. No doubt the chips at the TV licensing office in Bristol will have something to add to the debate.



«What is a TV set a TV? No one seems to know for sure...»

press the right arrow key until the Cursor pos indicator (top right) reads 15E - the byte under the cursor should be 87. Simply type in the new value as indicated above and select the save gadget when you are certain you have it right (there is an undo feature which can be used before the save if you mislaid).

Anonymous

Whoops, we seem to have got your tip right this time, but Express's lightning typed oversight your name and address and left us without a clue to your true identity since we have also lost your original letter. Keep the fire coming thick and fast and we'll redress the balance.

TIP! Memory saver

Here's a tip for Professional Page users (and indeed any other memory hungry packages). Redirect print output before running the program, by double clicking on the CMD icon in the Utilities drawer in Workbench. If you have the memory to spare accept the default destination RAM: (look at footnotes in the info screen) and print the file after leaving Pro Page by copying the file to the PRT device in copy «filename» .prt:

This lets you carry on working in Pro Page much quicker, doesn't hog valuable memory (Pro Page seems to require a lot of memory to print a file. If memory is a problem redirect print file to disk by changing default to floppy), and just about allows you to use another package while the file is printed in the background at a later stage. This note was written in Printwin while printing a half M file produced in Pro Page. Print time

was just over four minutes (total (approx two mins for Pro Page and 2.5 mins from the CPU) on an Epson GQ5000 laser at 300dpi.

Joe Moran, Belfast.

At the risk of an almighty grin: "Thanks for the memory..."

TIP! Soldering on

Just a couple of questions that I would find most helpful if answered in your column.

- 1) With regards to the advice offered in Circuit City (issue 130) about connecting the Amstrad monitor to the AmigaST. Does the advice refer to the colour monitor or the green screen? If it's colour what should be done with the SV DC power cable?
- 2) Is there any way that an external cassette recorder can be connected to the CPC 464. I have tried unsuccessfully to solder an output and input jack to the circuit board connections of play and record head. Any help?

Matt, Milton Keynes.

- 1) It was the colour monitor and we did nothing with the DC power cable in case we wanted to use the monitor with a CPC again.

- 2) No. It's a dark idea and you shouldn't have attempted it anyway. If the CPC tape is pooped, CPC Components in Preston should be able to supply replacement parts.

TIP! Null modem

At home we have an Amiga 500 and our next door neighbour has an Atari ST. We both perform various offices in local committees and clubs and help each other with

typing and cataloguing.

About a year ago, we both bought a modem and communications software and used the serial port and our wonderful system X exchange to pass files air way, committees and clubs have become busier and we can now spend up to two hours a day online.

Both machines stay online all the time and we've even installed dedicated phone lines and host software so that we can operate each other's machines remotely. My son pointed out that as both machines were in rooms backing on to each other (we both live in a pair of semis), maybe we could drill the wall or run a cable through the window frame and connect the modems back to back. This way we will cut down on the phone bills (and perhaps pay for the holes we have to have drilled by a tradesman).

Bill Soddler, Newcastle upon Tyne.

Your son is quite right when he reckons that you can save money with a direct link. You could be in for a greater saving than you think though.

The purpose of a modem is to MCModulate and DEMModulate the digital signals from the serial port into an audio signal that Telecom's lines can carry. (That's how it got the name modem).

For short distances by direct wire, the modems can be done away with and a simple cable can connect the machines through the wall. The cable that does this job is known as a null modem cable and can be purchased from most computer retailers for a few pounds. Assuming that you intend to keep the hole in the wall down to a minimum size, it will probably be a good idea to get the cable with its connector on one end only, pass it through the wall and then solder on the other connector.

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The EVENT HORIZON

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THE PLACES TO BE...

Consumer Electronics Show '84 June
At the McCormick Place Chicago, USA
info: 011 312 554 7570

Virtual Reality '91 5-6 June
At the Conference Forum, London, info:
071-631 9986

ESMA 11-12 June
At the Sheraton Copenhagen Hotel,
Denmark, info: 0385 793 025

Portable Computing '84 18-19 June
At Kensington Town Hall, Exhibition
Centre, London, info: 0254 83503

OIS IMC '91 2-6 July
The document image processing conference at the Wandley Conference and
Exhibition Centre, London, info: 071-931
9995

PC World Forum 9-14 July
In Moscow, from Telenor Coe on

010 1 308 820 8122

The International '84 8th Computer Show 15 July
At the Novotel Hotel, Hammerstein,
London, info: 0726 68623

Computer Animation Competition and Exhibition 25-26 August
Animation is enjoying a considerable amount of popularity, with affordable computers now offering graphics display capabilities previously available only to the professionals. The arrival of some exceptional software has meant that many gifted amateurs are able to create stunning, innovative sequences in minimal cost. A random sample of PD demos will reveal the quality of this work.

The Computer Animation Competition is organised by the Amiga Centre, Scotland and is open to Amiga users the world over. The winning entries will be displayed in the exhibition at the ACS which is part of the Edinburgh Festival, open to the public.

As well as public acclaim, winners will receive prizes of hardware and software from the sponsoring companies.

Entries must be on an Amiga disk or PAL video tape. Closing date is 31 July. Contact Fiona Shiva on 031 567 4242.

Leeds Computer Show 19-19 Sept

At the New Exhibition Centre at Leeds University, info: 0532 677 657.

Business Communications Awards 18 October

The fifth competition of its kind, organised by BT in conjunction with The Sunday Times. The awards will be presented at a dinner at the Savoy Hotel, London. Prizes go to those companies able to demonstrate the most effective use of telecommunications.

The closing date for entries is 15 July. Entry forms can be obtained by calling BT on 0600 960 947.

Image Processing '84 29-31 Oct
At the Birmingham NEC, info: 081 866 9633.

Computer Graphics '91 5-7 Nov
At the Alexandra Palace in London, info:
081 868 9533.

Desktop Call '91 6-7 Nov
As above

Computers in the City 13-16 Nov
At the Barbican Centre in London, info:
081 860 4455.

Golden Moments

A look back into the history of computing with Express. If it happened we reported it first.

ONE YEAR AGO

6 Playing video games could only be the last request of the most die-hard gamers' fan. But this is precisely how Leonard Laws, convicted murderer, spent his last hours on Death Row before seeing his last 'Game Over' message.

6 In an effort to solve the riddle of the Sphinx, or at least of why it insists on eroding away, scientists placed a computerised weather centre on its back. Working on solar power, the centre sent data on rainfall, wind, humidity and pollutants to a remote host computer. The information was to be used in developing a way of saving the Sphinx from further decay.

6 Only five weeks after its launch in Japan, the Neo-Geo console was beginning to make unusual appearances in UK shops.

The machine offered an impressive specification (it doesn't look too bad today): high resolution graphics, 4096 colours at once and 68000 and 280 processors working in tandem. Despite its early start, the Neo-Geo doesn't seem to have quite taken off. This could be due to its price - initially £400 for the machine and £200 for each game cartridge.

TWO YEARS AGO

6 Cradley's computing became reality with a system developed at Manchester University. Called the BioScribe, the system could mathematically predict the interactions of molecules with various drugs, so avoiding the need for animal testing.

6 New hardware manufacturers accounted for half of the world's personal computer sales. It was revealed in a chart published by IDC.

Only single user machines were included, but nevertheless IBM came out with the largest share of 11.5%. Surprisingly, Commodore came second, with 10.7%, but this was accounted for more by the popularity of the C64 rather than Amiga sales.

The Insider ...

A regular look at an industry which is attempting to find (or invent) terms of B during yet strong competition and personality.

The Insider has had a fine week poking about the computer industry in search of scurrilous gossip and dirty dealings. If you have snips, or snaps, which you think should be aired to the public, then send them to: The Insider, New Computer Express, 30 Ryehead Street, Bath BA1 2BN. Anonymity is assured, as is a fever for anything good.

PRODUCT KNOWLEDGE NIL

Sega has long been trying to find a character who will compete with the world arena with Nintendo's Super Mario Bros. This year it feels that it has cracked it. If you will excuse the pun, with Sonic the Hedgehog. This spiky, cute little chap is being hyped nearly as much as that slope-kicking star of field and hospital bed, Gazza. Anyway, at the plump press briefing to announce Sonic to the world, leading PR company Lynne Franko put one

of its star chips on stage in order to extol the virtues of the bag. He proudly announced that 'The Sonic Hedgehog' had arrived. Lyn Franko currently represents Henry Leary, Cherry Lehm, and Paul John Riva Gaultier. Nice one!

THE CPC IS UNWELL

What if the Insider hears about certain words out of him at the recent All Farnets Fair in Birmingham? It appears that a certain Amstrad's Roland Pugh (the name behind RPED 8485) mentioned in passing that the dear old CPC was due for a drop in price. Our sources also tell us just when this ill-based fact is open to question! That out of 100,000 6128s made only 20,000 had been sold. Whoopee! Does this mean the we are soon to CPC the death of the machine which made Amstrad so loved in the world of home computers?

OUR SOUR GRAPES

It appears that Minorsail is not pleased with Express' own Tim Smith. In a recent review, the crude and sluggish young hawk gave a mere 65 per cent to one of Minorsail's games (The Gliding Air or something like that).

Minorsail's PR lady and washing machine expert, Cathy Campos, let that she had to write and complain about the outrageous situation. After all, how could a game from the people who brought us Teenage Mutant Hero Turtles, get anything less than 100 per cent? Stopped writing all round.

THE JONE IS ON THEM

Overheard at Condex in Chicago: How do you get 400 PC developers in a phone booth? Put Bill Gates in there and they will all crawl up his... (that is quite enough of that for now). See you soon!

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A BIT TOO SERIOUS?

If all this talk of Blatner and Kessler is a bit too much for your poor brain, then Fantasia can provide a nice easy range of games. Mostly puzzle games, but there are a couple of arcade titles floating around. The range of games is all very mild, but hidden amongst them was a real little gem!

A guitar synth! It will keep you engrossed for hours. The strings of the guitar are displayed on screen, you simply drag the mouse pointer across them to play notes or over chords.

It is completely idiot proof, you hold down selected keys to change the note or chord and away you go. Twang, ke-riang, Woosawagay. (Gads Van Haken eat your heart out. Well, no, not quite. But while the sounds aren't exactly AC/DC, they are enough to give you a few hours of stimulating fun.

GET SPACED OUT

Airline and spacecraft enthusiasts will be pleased to hear that a disk packed full of highly interesting information on all things aeronautical has become available, including articles from leading NASA scientists, no less.

One of these is a rather sinister letter from a NASA guy explaining that he had to stop work for a time, while

DEMOS TO GAMES

A reasonably well known PD demo maker and supplier has finally put its name on the map. Seventeen Bit Software has just released its first fully commercial game.

F.U. Contact is obviously far too good to be released on the PD circuit and so, by securing a publishing deal with specially named budget label Team 17, the Seventeen Bits have started something really interesting.

Demo makers make games? Everyone knows that the best demos include some absolutely stunning programming techniques, these it seems have been carried over onto the well received first release.

Seventeen PD gamers may be able to recognise some of the graphic styles used. Well done to the Seventeen Bit team, especially as the game has been

repairs were made to the saffron rings on the doomed shuttle *Challenger*. Apparently, it was written before that terrible accident of 1986.

It's these little extras which set this program apart from standardised facts and numbers information databases which, while useful, hardly make for a jolly evening read.

released at a 16-bit budget price of £10.99, which should put many big software houses to shame.

AMIGA PSYCHEDELIC TRIP



• No Limits: *MSD Amiga demo*

Amiga demos are hardly sparse, so it comes as something of a surprise when a demo makes you ill up and take notice. Now Wave software sent along a demo that did just that.

The No Limits Back Pack 2 demo (!) swear, the names get even more stupid than that! contains some really peppy tunes and graphical effects, some of which are impressive and some completely mind-blowing.

One of the options on the menu you are presented with, is to boot up some of the most psychedelic images you'll ever see. Most of these involve bands of colour moving almost exactly like water. The movement of the 'water' is almost hypnotic and further enhanced by the use of a full 4096 colours.

WHERE TO GO

Fantasia Software supplies a vast range of software for IBM PCs and Apple Macintosh; its Mac catalogue will be available shortly, send an SAE to: Fantasia Software, PO Box 1254, Croydon Martin, Surrey, Tel: 0781 221585.

Seventeen Bit Software can be contacted at: Seventeen Bit Software, PO Box 37, Wakefield, WPT 1XX, Tel: 0534 268862.

Wave Amiga demos from: Wave Free PD at 23, Eboragh Road, Morden, Surrey, Wilt, Surrey, UK.

The music tracks accompanying this visual display are, without exception, brilliant with excellent use of samples and sequencing software. Most alluring is a kind of Japanese sounding hip-hop mix.

There are the usual vector and copper bar displays, all of which are pulled off flawlessly and seemingly in time to the music. The good thing about the No Limits demo is that it features the work of a fair few artists. Musicians and programmers, all showing off as much as they can fit on a disk. ■

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- PCG 12 Card Games
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- PCG 14 Baseball
- PCG 15 Baseball (US version)
- PCG 16 Return to Earth
- PCG 17 Super Contrasto
- PCG 18 The Next Generation
- PCG 19 Charlie, Sister, Sister
- PCG 20 Labyrinth (PC II)
- PCG 21 Stone Age
- PCG 22 Amalgam

SLIDESHOWS

- PSL 1 Agnoste 2
- PSL 2 Agnoste 1
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PERFECT OUTPUT

Thermal wax transfer printing is a relatively new method of producing high-quality colour output at an affordable price. John Cooper takes a look at one of the cheapest devices on the market: The Spectra*Star.

Until fairly recently, colour output was prohibitively expensive – either you accepted relatively poor quality output from colour inkjet printers or you paid several tens of thousands of pounds for a high-quality colour output device.

However, recent advances in technology have meant that the price has dropped radically – the cheapest machine in the Spectra*Star range now sells for just £4,000 plus VAT. OK, it's still not exactly peanuts, but small businesses are now considering colour printers as an alternative to going to the local copy shop to produce things like coloured overhead transparency slides.

COLOUR THEORY

Colours on the page are created by overlaying varying amounts of three 'primary printing colours' – cyan, magenta and yellow. Although black can be created simply by overlaying 100 per cent of all three colours, in practice this black is not dark enough – it tends to look slightly grey – so black is printed as a fourth colour. This is why full-colour printing is often referred to as 'CMYK': for Cyan, Magenta, Yellow and the Key colour (black).

Desktop colour printers are generally either three-colour, relying on mixing the three together to produce black, or four-colour, with a separate black ink as the fourth colour. Three-colour printers are normally much cheaper than their four-colour equivalents, but are not generally regarded as being as good for exact colour proofing work.

THE SPECTRA*STAR

The printer on review is the middle model in the Spectra*Star range, the 430, and can work in both three and four-colour modes. It can also, if required, just have a black ribbon installed, although this seems to be a bit of a waste – you don't often think of paying £6,900 for a one-colour printer.

Setting up was simplicity itself. Installing the ribbon is a piece of cake; from opening the box to having the printer sitting on the desk (a rather large and sturdy desk is required, it should be noted) took less than fifteen minutes.

The model we tested has parallel, serial and AppleTalk connectors, so attaching it to a computer was

no problem; again, the documentation is good and the package includes 3.5-inch and 5.25-inch disks containing PC utilities as well as a 3.5-inch Macintosh disk.

For test purposes we connected the machine to one of the office Macs. This involved simply plugging the printer into the Mac via AppleTalk and installing a couple of small pieces of software. The printer output an image first time – but only in mono. It took us about half an hour before we discovered the problem: you have to alter the printer type from LaserWriter II to something like 'CMS ColourScript' or 'Tak Phaser PK' before you can persuade the printer to actually output colour. Easy when you know how, but it would have been easier if the manual had actually informed us, rather than leaving us to guess.

The problem solved, the printer was faultless in operation. The output of thermal wax transfer devices is slightly shiny, which means that printouts look very impressive. The only other niggle is one which is common to all colour printers of this type: because the printer must grip the paper lightly as it moves it about to ensure that colours are not printed out of registration, it is impossible to achieve a full A4-sized output.

Using the printer from a PC is equally simple; emulation modes include HP-GL and PostScript, so there should be no problem getting your software to talk to it.

IS IT WORTH IT?

The printer's supplier, General Parameters, claims that consumables such as the ribbons and paper (you can't use normal paper in the printer) cost about 20 per cent less than their competitors'. However, this still leaves you with a cost of about 38 pence per page output on paper and a staggering 98 pence per page on HP fire. Clearly, the printer is not intended for outputting reams of pages every day. But for the small business which needs something for rough colour proofing, or even for producing colour front pages for limited-run brochures (the cost per page is far cheaper than getting a colour photocopy), this printer is well worth considering.

The prices of the Spectra*Star range are on a separate panel. The suppliers, General Parameters, can be contacted on 081 897 3646.

EDITOR IN WIDE LAPELS SHOCK



• Printing glossy colour pages on the Spectra*Star is cheaper than getting a colour photocopy made.

PRODUCT DETAILS

There are four models in the Spectra*Star range (we reviewed the 430). Each model includes all the features of the one before:

- Model 410: 1MB RAM, Serial and Parallel ports, Microsoft emulation, 24,000 × VAT.
- Model 420: 4MB RAM, HP-GL and Targa emulation, 24,000 × VAT.
- Model 430: 5MB RAM, AppleTalk port, PostScript interpreter, 35 fonts, 55,900 × VAT.
- Model 440: 32MB internal hard disk, CTBA.
- Model 450: Able to produce 35mm slides (with option add-on), CTBA.

FOR AND AGAINST

POINTS FOR

- ▲ Easy to set up.
- ▲ Professional-looking output.
- ▲ Fast printing speed.
- ▲ Good range of emulations available – including PostScript.
- ▲ Easy to use to produce overhead projector slides.

POINTS AGAINST

- ▼ Expensive initial purchase.
- ▼ Far higher cost-per-page than normal laser printers.
- ▼ Requires its own special paper.

SO WHAT IS THIS THERMAL WAX TRANSFER THEN?

Thermal wax transfer is a process whereby coloured, translucent wax-based ink is transferred from a ribbon to the paper. Three-colour printers have three different ribbons: cyan, magenta and yellow. Four-colour printers also have a black ribbon.

Different colour wax pens are superimposed from each ribbon

to create the desired colour. Three-colour printers produce black by overlaying all three first colours of wax ink. This has two advantages and disadvantages: three-colour printers are cheaper (and give a less dark black than four-colour devices). For many, the black is perfectly adequate – it's only for specialist applications

that you might need a deep/crystal black. A far cheaper method of colour printing is called padding, where coloured inks are sprayed all the way. However, there is a drawback to this lower price – the quality is nowhere near as good. If you are looking for decent quality colour output, thermal transfer is the only real option.

BUBBLING UNDER

● Nintendo's Super Famicom launched to the Japanese public last year, it is at last set to appear in a modified form in the

USA this summer. It should reach Europe in 1993.

● Owners of imported machines will also be pleased to hear that Electronic Arts has three new Super Famicom titles. Well, new-ish, for these are cosmetically enhanced conversions of existing Sega MegaDrive releases...

Joining Populous on the SuperFamicom will be the basketball simulation *Center Versus Lakers*, John Madden's Football, and PGA Tour Golf. Could this affect the loyalty of MegaDrive owners? We asked Electronic Arts' PR Manager Simon Jeffrey. He believes "it will vary from title to title. The Super Famicom's specialities lie in different areas to the MegaDrive. Soared is one of its strongest features, and this is of major interest for us, especially with Rob Hubbard writing our tunes. He's done some great stuff for the Sega and he's been itching to get his hands on the Super Famicom's Sony chip for sometime, so you really will notice the difference."

The quantity of home computer to console conversions is increasing, especially with more and more developers being to move on to writing for the more financially rewarding consoles. The situation could work in reverse - EA for one isn't ruling out the possibility of converting, say, John Madden's Football to the Amiga.

"Consoles and home computers can sit side by side. There are different mentalities of owner. Some buy a home computer because there is still the promise that you can do other things with it, more so in Europe where people are more suspicious of the idea of computers purely for home entertainment."

And what of Electronic Arts' vision of the future of console software? "I think you'll see quite a few polygon games appearing," says Simon. "Sega has licensed Akira's Battle Tank from us and has converted it to the MegaDrive for release in October. In September we're shipping P-22 Advanced Tactical Fighter for the MegaDrive - and that's a polygon-based flight simulation."

Games Week

Riding along on the crest of a software wave, Gary Penn surfs up the news, views, previews and reviews of the latest happening items...

Good news for anyone who can't afford much more than the cheapest of budget titles... French publisher Ubisoft is releasing five compilations of former full-price titles this summer, with a further five collections due to appear before the end of this year. *Magnum* (£26.99) brings together a diverse mixture of simulation and arcade action, with Ubisoft's very reasonable *Pro Tennis Tour*: the motorcycle racer *RVP Honda* and *Oriental Game* (which takes 36 combination of events a little too seriously for my liking); and two run-of-the-mill Dynamic titles: the arcade adventure come run-'n'-jump romp *Satan* and the slightly less rainy and jumpy *After The War*.

The *Wishing 5* (£29.99) has a content no less varied but is exclusively a Ubisoft affair. The collection comprises the mediaval adventure *Iron Lord*, the vampire-orientated arcade adventure action of *NightHunter*, the sickeningly cute Gauntlet-inspired *Puffy's Saga*, and two quite respectable arcade adventures: *Twins World* and *Six Fraid*.

Cassette-based Amstrad CPC, Spectrum and Commodore 64 users need not feel left out, for there are two compatible compilations coming... *The Ultimate Collection* and *Six Appeal*, both featuring six titles and priced at £14.99. *The Ultimate Collection's* star attraction - Geoff Crammond's superlative *Shant Car Racer* (first



● *Shant Car Racer*: just as fast, but at half price.

released on the MicroStyle label) is joined by three titles from Ubisoft and two from Spanish publisher Dynamic. Ubi's contributions are the futuristic *Skateboarders*, the atmospheric cursor-controlled adventure *Zombi*, and *Pro Tennis Tour*. The Dynamic duo comprises *After The War* and the best-looking blaster *AMC*.

The saucy-sounding *Six Appeal* (which is also available in diskette form for £19.99 on the Commodore 64 only) has just that. The most appealing of the six is Core Design's *Rick Dangerous* (first released on the Finbird label). The Finbird-produced conversions of Jaleco's arcade shoot 'em up *P-47* have their moments, as do Dynamic's *Satan* and Ubisoft's *Twins World*. *Puffy's Saga* and the peculiar arcade-style puzzle (for want of a more appropriate term) *Pick 'n' Pick*.

Last but not least, there's fan to be had for all the IBM PC family and

TOP 10 SIXTEEN-BIT GAMES

10	Eye of the beholder	US Gold	AG
9	Hero Guard	Greenline Graphics	ST AG
8	Monkey Island	US Gold	AG PC
7	Lemmings	Pygmalion	ST AG
6	Defender of the Crown	Micro Image	ST AG PC
5	Gods	Renaissance/Indiscope	ST AG
4	Fantasy World dizzy	Codemasters	ST AG
3	North and South	Digital Integration	ST AG
2	Steve Davis World Snooker	CDS	ST AG
1	Mya's Rabbite	Micro value	ST AG

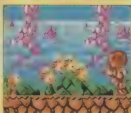
ST = Atari ST; AG = Commodore Amiga; PC = IBM PC or compatible; C7 = Other. Staff compiled by Garry, 2. European Leisure Software Publishers' Association.

TOKI

Ocean* Amstrad Cartridge £24.99, Commodore 64 Cartridge £19.99.

Spectrum Cassette £10.99, Amiga & Atari ST £24.99.

Planned Versions: None



▲ The first and only level-based actioner in this fellow, he leaps around the screen, making a grab for Toki and frequently leaving behind a string of four bounding diamond-like beings. The *Raccoon* get weaker still further into the adventure. A floating *Michelle* Mer-silver thunders bounding symbols at Toki, and a large, long-legged creature spits out letters spelling out the word *BUN!*

The course of true love never runs smooth, especially when your misadventure has just been abetted by a notorious magician who, as a punting peasant, knocked you down to the lower range of the evolutionary ladder. The once rich-hard Toki is now an ape. A reunion and revenge are on the cards - but Toki's rival isn't dealing with a half-dead. He world is split into six, every-way scrolling zones packed with platforms, ladders and bizarre beasts.

Being an ape does have advantages though, namely increased agility to aid negotiation of the environment, and the socially unacceptable ability to spit in almost any direction, which comes in handy when it comes to removing adversaries from the scene.

Toki's flopping power is occasionally boosted and even turned to flame thanks to special items left lying around. What a pity they don't last long. Tad Corporation's coin-operated cult favorite has come to the home-machines in style. These are cracking conversions all round, every one capturing the tough but playable and rewarding nature of the arcade parent. A special mention must go to the near-perfect Amiga version complete with 3D parallax scrolling and attractive 32-colour display.

GAMES REVIEW



• Risk: Dangerous: going underground.

compatible kin with five racy releases collectively known as **Fast Lane**. **Start Car Racer** once again takes pole position. Just for the black/red/red, the other four titles are Spectrum HoloByte's **Vette**, Electronic Arts' ageing but acceptable **Ferrari Formula 1**, Domark's adequate conversion of Atari Games' **Hard Driver** and Mirod's lacklustre **Highway Patrol**.



• Quest for food issues in Prehysterik.

"Half human, half hungry" marks how French publisher Trion describes the neandertal star of its new run 'n' jump romp, **Prehysterik**. This club-wielding cavewoman needs food, and so she undertakes a journey across the scorching fields of Antarctica and through delivered caverns and Tropical jungles. He's not the only one who's hungry though - there are species of dangerous dinosaurs roaming the land too. Priced at £25.99, **Prehysterik** should be available for the Amiga, Atari ST and IBM PC and compatibles by the time you read this. ■

SUPER CARS

The choicest cuts of information and advice, courtesy of the authors, collectively known as Magnetic Fields.

THE SHOP



When the shop is visited the equipment odds are chosen at random from between a quarter of the maximum price and the maximum. The trade-in prices are simply three-quarters of the sale price shown. The following chart should prove useful for wheeler-dealing wheel-spinners...

ITEM	BUY	SELL
FRONT MISSILE	100 - 400	75 - 300
REAR MISSILE	150 - 600	110 - 450
HOMING MISSILES	375 - 1500	280 - 1125
MINES	250 - 1000	185 - 750
MINES	200 - 800	150 - 600
TURBO JUMP	125 - 500	90 - 375
ARMOUR	750 - 3000	560 - 2250
RAM	250 - 1000	185 - 750
ENGINE	1250 - 5000	935 - 3750

FRONT AND REAR MISSILES. They have their uses, sure, but they are best used to fund the purchase of other weapons. Buy them cheap then sell them when the price is right. **HOMING MISSILES** Unbeatable

all-round entertainment, but best used to take out the opposition on fast courses or to clear narrow roads.

SUPER MISSILE Useful in tunnels where you can't see what's coming or on courses with gates where cars suddenly appear coming the other way.

MINES Keep the opposition off your tail - but don't forget that the mines do self-destruct. **TURBO JUMP** Use it to leap to the head of the queue at the very start of a race (ie when standing still) or for jumping trains (which is best done from a distance of approximately three cars).

ARMOUR Must Buy, but not at any cost. Be frugal. And be prepared for the hard level by buying all three grades. **RAM** All well and good, but it doesn't do your car any favours either. **ENGINE** Increases your car's top speed (which is near-essential on higher levels) but don't sell your granny to white slave traders to get one.

COMMUNICATIONS

Don't turn them off - these screens are a good source of cash and points (provided you know the answers). On most screens it's wise to be self-confident but not cheeky. When it comes to dealing with the Transport Inspector, keep your answers as straightforward as possible. One of the answers is always **RIGHT**, one is always **WRONG**, and the other could go either way so just because you got it right or wrong the first time, doesn't mean it will necessarily be so the next time around - haha!

COURSE FEATURES



JUMPS Keep as straight as possible at launch - unless there's a corner involved, in which case jumping at a slight angle can avoid a collision with a wall on the other side. If you get stuck in a traffic jam before a jump, wait until the mass clears before taking a run-up. **CROSS OVERS** Don't cheat - otherwise the lap won't count. Even if you get knocked off course, go back and clear this obstacle. **OPENING GATES** It's usually worth waiting for them to open, so do so. All the gates on the same course open and close at the same time, so it's easy enough to tell when the time is right. Bear in mind that you can just about squeeze through closing gates. **TUNNELS** So you get stuck and couldn't get out. The next time it happens, keep turning until the screen scrolls in the correct direction then make your move.

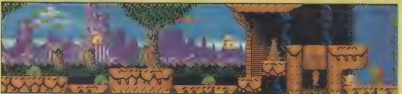
GENERAL ADVICE

HANDBRAKE TURNING These are best employed on tight corners. As the bend is approached take your finger off the accelerator and turn the car. When it's halfway through the turn and thus the desired direction, hit the accelerator. **OVERTAKING** This is usually easily achieved on the straights, although it is possible to do the deed on the corners. Take the inside line and bump the other car. By the time it gets its bearings you should be long gone. Remember that crashing into another car slows you both down, so there may be times when you need to be patient and wait for a more suitable overtaking opportunity.



▲ In true Givers' 'n' Golden style, an overview of the world is bestowed to show before play - just to let you know where you stand.

▼ This stable slice of the first run serves to illustrate the attractiveness of Told's odd, and lovely, environment. Note the 16-bit weight balanced on the see-saw to the far right - the combination's used to shoot Told to new heights.



PC SOUND SOLUTION

The PC's sound is normally limited to a diminutive beep. Keith Pomfret listens to a soundcard that puts the PC into the Amiga sound league...



• Sound Master II has all that you'll need for PC sound including a headset, MIDI ports and comprehensive documentation.

Like most sound cards, Sound Master II comes from the US. This is hardly surprising considering that, as well as being a business machine, the PC is seen as much more of a home leisure machine than here in Britain. Thus the need for decent sounds.

Manufacturer Covox claims that the Sound Master II card and its associated peripherals offer a complete Multi-Media sound package compatible with all major PC specifications and existing industry standards. So what's it all about?

POWER OF SPEECH

Most important to the PC gamer is Sound Master's compatibility with industry standard sound-card Ad Lib.

This means hundreds of programs record sound drivers for the Ad Lib board can benefit from Sound Master II. As well as the ability to enhance the sound of games, there are several other features that make it a fascinating and well specified product.

The board can sample and edit sound, work as a MIDI interface, function as a polyphonic multi-tyrannal synthesiser and recognise and synthesise speech.

Software is provided to do all of this, and a MIDI record and notation package allows you to record music either on the screen or from a musical instrument and view and print it as manuscript.

In the Soundmaster II box is an 8-bit PC expansion card, a headset with built in microphone, MIDI cables, a speaker, software and manuals. Installing the board is a simple matter of unplugging the PC, opening it up, sliding the card into any available eight or sixteen bit slot and securing it. No problems there.

There's an included cable to allow the Sound Master II to connect to the speaker port on the PC's main system board and this caused a slight panic due to the fact that the portable we planned to test the card on didn't have an accessible main board.

A switch to a desk-top machine brought the board

into view but some ingenuity was needed to make the connection and persuade it to work. Once this had been done, it was a simple matter to put the PC back together and check the rest of the package's contents.

PASS THE PORT

With the board installed, there were inputs for line/microphone and a low level signal input, a volume control, mini-jack audio output and a nine pin port for connecting the provided MIDI cable.

The hardware was installed and connected in about 15 minutes and with the machine re-assembled it was time to run the test software to make sure that all was OK. All the tests were passed with flying colours and it was on to the test proper.

Sound Master II buys you the facilities to do a great deal more than listen to the pleasant screeches of dying aliens

Most soundcards for the PC serve a simple function of greatly enhancing the noises that programs make. Games benefit from more realistic sound and the hideous IBM beep is done away with in favour of something a good deal more melodic. While most simple soundcards stop there, the extra you'll pay for Sound Master II buys you the facilities to do a great deal more than listen to the pleasant screeches of dying aliens.

In order to be able to process sound other than that made on its own synthesiser chip, it has two inputs. The first is a low level input suitable for dynamic pattern microphones of recording studio quality. The second is a high level input suitable for signal line or microphones working on the electron crystal principle. The analogue inputs are boosted by a pre-amplifier.

GOOD AS THE AMIGA?

Digital input is handled by an 8-bit AD converter which allows a sampling rate of 25KHz. This is comparable as digitisers being used with the Amiga and is certainly a high enough sample rate to allow decent clarity of the sampled sound.

Once the sound is into the PC, it can be edited from existing files from itself or other soundboards. Waveform editing software allows the sound to be edited on the fly or from files. Real time editing includes pitch changing, formant building, flanger and chorus effects, echo, reverb, and distortion.

To complement the real-time effects there is an on screen waveform editor that features a graphic display

of the section of the sound that you're working on. Using the screen you can cut, paste, splice, invert filter, move and adjust any aspect of the sounds.

Once the sound is processed it is output via a digitaliser offering the same sample rate as commercial CDs, although the hardware isn't able to produce CD quality sound just yet.

If a digital or analogue sound source isn't available, there's an on-board multidimensional polyphonic synthesiser. This uses FM synthesis to voice up to nine melodic sounds or 11 if percussion is included. Analogue synth effects such as vibrato (frequency modulation) and tremolo (amplitude modulation) and combinations of both are possible. Because the synthesiser is Ad Lib compatible it is possible to use it with professional MIDI software that can drive the Ad Lib.

To allow two cards to be driven simultaneously or to avoid address problems, the port addresses of the Sound Master can be simply altered. A MIDI lead is provided and configures the card for a pair of MIDI ports (in and out). MIDI software can drive the card internally or externally and the availability of all of these features on a single card solves all of the PC sound input/output problems and yet only uses one expansion slot.

PICKING UP STRAUS

Finally, and in some ways most impressively, Sound Master II has software that allows speech synthesis and voice recognition. The current version can recognise up to 1,000 voice commands, so saying to the PC, "Play me some Strauss" could become a reality.

The voice recognition software is a down-up version of Voice Master Key and allows you to train the computer to recognise your voice. Voice commands are simple using a headset provided with a built in microphone. With this powerful facility, it is possible to password protect your computer in a way that means that if someone finds out your password, they still can't get in because they haven't your voice. This is fine until you get it and your voice goes husky!

EARS THE VERDICT

At £207 it's more expensive than some soundcards (although still cheaper than the Roland LAPC1), its strength is in the specification that included everything you could possibly want. It's costly but worth every penny. Your ears will never crave to the vile sounds of your PC ever again. ■

The PC Sound Master features AMX, Voice activated synthesis, speech synthesis, digitising and sound editing. Price £207 including VAT. Available from Covox Europe on 0983 867020.

FOR AND AGAINST

FOR

- ▲ Well specified
- ▲ Well featured
- ▲ Ad Lib compatible
- ▲ Good documentation

AGAINST

- ▼ Software not as user friendly as some
- ▼ Good value but £200+ is still a lot to pay if you only want a soundcard

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PALMTOP POWER



First seen in this country at April's Which Show, Hewlett-Packard and Lotus's acclaimed HP 95LX palmtop PC, will be in the shops in two weeks time. Stuart Clark got his palms on one ahead of the hordes...

Look at the relative failure of the innovative Pogo! PC with the benefit of hindsight and you could easily conclude there's no market for palmtop PCs. Sure, it's small, light and uses memory cards for storage, but the keyboard's awful and it's far too expensive.

Pogo! came up with some good ideas but failed to capitalise on what has to be one of the biggest markets of the nineties. Both Hewlett Packard and Lotus know this and are well known as heavyweight purveyors of respected hardware and software. HP with its long history of PC manufacture, Lotus with its quasi-industry standard business analysis software 1-2-3 - the biggest selling program in the world. So it's not much of a surprise to see the two companies coming together to produce a portable platform to target the 14 million 1-2-3 users worldwide.

The theory is straightforward enough. Lotus 1-2-3 is a world standard like the PC. Its users increasingly wish to take their worksheets, graphics and macros wherever they may go. What they therefore require is the applications software on read only memory (ROM), so it's always there, embedded in a small, lightweight hand-held which can easily be hooked up to a desktop PC for transferring files.

So, after years of development work in conjunction with Intel, you have yourself a £449 VAT free marvel with one-key access to all applications, built-in calculator tools, support for third party software and communication capabilities. And what's more it's the size of a cheque book and weighs only 11 ounces. Coupled with one of Touchbase's Workport range of portable faxmodems and a printer like Kodak's miniature Docuink and you finally have the office any money-man can carry in his pocket. Pogo! must be very worried people indeed. But enough of the promise - How does this palmtop perform?

UNDER THE HOOD

Let's first have a look at what powers it. Two AA batteries actually. These drive the heart of the 95LX, its custom PC XT chipset developed by Intel which reduces the size of a standard PC from five integrated circuits to two. Occupying only 2.5 by 3.25 inches this tiny motherboard offers performance which HP say is two and a half times more powerful than a standard XT. Running on this is the first full implementation of MS-DOS ROM. Microsoft's operating system, version 3.22, which is booted from read only memory. Input to memory card loaded software is via a neat QWERTY keyboard, with a 16 line x 40 character supermini LCD

screen displaying output.

The keyboard is virtually useless unless you can't type properly. That's because only two fingers can comfortably fit in its constrained space. What's more, the keys are more like calculator buttons than 'real' keys so word processing has annoying difficulties. But as a formulae and number input device, it's fine - which is presumably why 1-2-3 is on-board. Lessons have been learnt from the Pogo! role model - the HP/Lotus market is for the money-men; leave the palmtop word processor to someone more reckless.

The screen is more of an innovation though since it is backlit by 12 volts rather than the more usual 5V and can thus be read in a greater number of positions and lighting conditions.

With the £395 Lotus 1-2-3 on-board, this palmtop will cost you only £54!

RAM cards can be slotted home in the built-in memory card drive to store portable data. All this is contained in a unit measuring only 8 inches wide, 3.5 inches long and one inch high. Power, supplied by the batteries, with a backup lithium unit to retain RAM when you change batteries, is ingeniously conserved. The microprocessor actually shuts down between keystrokes and the entire system goes to sleep after five minutes. Both these features allow a claimed average battery life of one month. There's also a mains adaptor you can hook up to.

READY TO ROLL

Besides 1-2-3 the 95LX has an appointment book, a telephone book, a memo pad, a file manager, a communications program and a financial calculator with lots of reports. What makes the machine new to use is that there's a common interface to all the functions. You can cut and paste data easily between applications and each one is always open. This means that as switching between tasks you are always returned to where you left off. This is plain common sense - it should be de rigueur in all notebook PCs.

With DOS 1-2-3 and the other applications in ROM, a quick check on the system status shows there's about 380K available for running RAM resident programs. You can use the built-in utility to set aside areas of the spare memory as a C drive RAM disk.

MAKING CONNECTIONS

You can also run any DOS applications you can find on memory cards - not a lot of well known ones at the moment - or, software protection allowing, download them from your host PC as long as you can configure their screens to the 95LX's 16x40 display. Thus the only means by which you can run DOS programs will be by using the machine's serial interface. The software included to make the most of this will also run on your host PC, so you can continually update both machines with new data by simply connecting the two with a serial cable transferring data at 57,600 bits per second - quite a healthy baud rate.

The other neat option is an infra-red connection for transferring files between two 95LXs. Here data can be copied between machines at up to 2400 baud as long as the machines are less than eight inches apart.

SIZING UP THE COMPETITION

The Atari Portfolio and Pogo! PC are the obvious peers of the 95LX. This Pogo! scores over both in that it offers an 80 character display and its keyboard is, these days, considerably better than the 95LX's. The price is prohibitive though and you don't get Lotus 1-2-3. The Atari Portfolio is a very popular machine but its display is even smaller than the 95LX and it only has 128K of RAM on-board. Of course, it only costs £199. The choice really depends on what you want a palmtop for: if speedsteering is your main use then the 95LX is the one to go for - it's PC compatible and has the 1205 Lotus 1-2-3 included. So you could conclude that with this on-board this palmtop will cost you only £56! ■

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HP 95LX palmtop PC	£327
Connectivity pack	£80
128K RAM card	£148
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SIZING UP THE PROS AND CONS

FOR

- ▲ Lightweight and compact
- ▲ Easy to use built-in software
- ▲ Incredible bargain
- ▲ Good screen

AGAINST

- ▼ Keyboard feels feel
- ▼ Unsuitable for word processing

MULTI-TASKING PCs

The facility to seem to have a number of applications running simultaneously is not, of course, true multi-tasking, but being able to flick between programs in suspended states comes very close for most practical reasons. Switch-It is a utility which allows you to do just that. Each application can be highlighted on a user configurable menu to be launched, be given its own full screen window and full functionality and yet with one key stroke you can switch to other programs.

This includes the DOS command line; you can trawl through your last 30 DOS commands to save retyping and flick between the command line and any applications. In addition, other Terminate and Stay Resident (TSR) utilities are unaffected; without taking valuable memory space away from your main applications. Moreover you can use Switch-It's screen and memory handling to transfer screen data between programs; effectively integrating all your applications. Perhaps its most endearing features are the scope it gives you to continue working in one program while loading another and the neat facility to have multiple copies of the same program running simultaneously.

SETTING THE SWITCHES

Switch-It is not easy protected so installing it is simply a question of copying all the files on the single 3.5 inch or two 5.25 inch floppies onto your hard disk. Typing INSTALL at the DOS prompt takes you through a simple series of configurations. You are able to specify which directory path the program should reside in and whether you wish Switch-It to auto-load each time you start up your machine. Then it automatically scans your hard disk for executable programs and builds its own menu ready for later switching. You can, of course, add to or subtract from the programs it has chosen, but for now this automatic selection is a very useful feature.

CHANNEL SWITCHING

Once up and running you are presented with a scrollable menu window, occupying roughly a quarter of the screen, with program names which can be highlighted either by using the up and down arrows, entering the number Switch-It has allocated it, or by typing in the first few letters of the program name. Pressing Enter performs the actual switch.

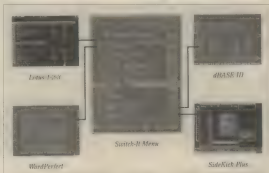
Next to the application names are ticks which represent the programs currently in suspension and can be activated by hitting the F4 key; the active program toggle. Also on this menu are readouts of the memory allocated to each program, which can be redefined. By hitting F1 while this menu is on screen, a help window appears which will explain all these items in more detail.

There are three different ways of switching

EXTENDED MEMORY SUPPORT

Switch-It can swap your programs from the 640K conventional memory into EMS or extended memory. Swapping in and out of memory is obviously faster than using a hard disk. To access any extended memory, you need to create a virtual disk or RAM drive (VDISK) in which your programs can be swapped. If you have a 1Mbyte RAM system, with, typically, 280K of extended memory, it's best allow to leave up to 256K for a RAM disk and leave the rest for Switch-It.

Do you use a hard disk PC? Do you want instant access to any of 100 of your favourite programs while you're running others? As Simon Walsh finds, Switch-It could be the answer to your PC productivity prayers...



• Whether you're in the middle of Latex 1-2-3, WordPerfect or dBase, a keystroke moves you instantly to another program.

between programs. The first is to use the menu screen just mentioned, but after you've become more familiar with the utility you can use either the active or hotkey switches. Active program switching merely relies on pressing the ALT up arrow or ALT down arrow keys together within any program and you will switch accordingly between the ticked applications in the menu screen. Hotkeying is the best way, but requires you to first to load Switch-It's Configuration Editor.

REDEFINING SUSPENSIONS

Here you're able to add new programs to Switch-It and rearrange the menu entry order besides setting up your rebays. These can be any key or key combination, but it's important to choose ones which don't conflict with the key combos found in the other program you use. The Configuration Editor also allows you to change a program's title on the menu, alter the memory allocated to it, and change its swap area. 'Program arguments' such as the particular default for a BAT file can be entered here. But the most useful of all user custom key assigning, and enough reason in itself to buy the program, are undoubtedly the mark and transfer facilities.

Put simply, these functions allow you to capture data from one application and move it into another, leaving the first program unaffected. You mark the text or other data you want to transfer by pressing the default ALT-DEL, or whatever custom hotkey you've assigned, which then passes the material to a clipboard or RAM buffer and will stay there until new data replaces it. You then hit ALT-INS to paste the data into the application screen of your choice.

Before marking any text you should really specify what format your receiving program is going to expect - there's no use porting spreadsheet numbers into a word

processor and expecting it to format the material periodically. So you are able to specify both the sending and receiving format easily with pull-down menus. In addition you can specify whether you want to port a whole screen of data or just a portion of it. If it's the latter, you can specify a rectangle in which text will be highlighted - extremely useful if you only want to port a specific area of a spreadsheet into a word processor. Likewise when transferring text from a word processor, you can specify the start and end by selecting the text with the cursor. Finally you can paste the clipboard into a word processor, modify it and re-transfer it back onto the clipboard.

Switch-It is an extremely useful little program which will pay for itself in no time in terms of increased productivity and hassle-free working. Switch-It is available from GalesSoft on GT52 251155 and costs £79.95. ■

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1 AT or compatible DOS 2.1+ hard disk
1 EMS memory

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